

DESIGN FOR DEVELOPMENT: Niagara (South Ontario) Region

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Phase 1: Analysis



Regional Development Branch
Department of Treasury and Economics

June 2, 1970

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DESIGN FOR DEVELOPMENT:

NIAGARA (SOUTH ONTARIO) DEVELOPMENT REGION

PHASE 1: ANALYSIS

Ontario


Regional Development Branch
Department of Treasury and Economics



PREFACE

This report is an abstraction of a much larger research study which analyzed in considerable detail the Region's social, economic and physical resources, its trends and problems. The present volume contains the basic analysis, omitting only the background statistical details. It also includes in full the chapter concerning regional goals, needs and priorities.

A limited number of research documents will be available for detailed study.



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Regional Development Branch,
880 Bay Street,
Toronto, Ontario



DEPARTMENT OF TREASURY AND ECONOMICS

PARLIAMENT BUILDINGS
TORONTO

May 27, 1970

Mr. H.I. Macdonald,
Deputy Treasurer of Ontario
and Deputy Minister of Economics,
Chairman, Interdepartmental Advisory
Committee on Regional Development,
Seventh Floor, Frost Building,
Toronto, Ontario.

Dear Mr. Macdonald:

I am pleased to submit to the Interdepartmental Committee on Regional Development the accompanying Report, Design for Development: Niagara (South Ontario) Region. For this Region, the Report contains the analysis phase of our Approach to Plan. The second phase, which will be concerned with policy recommendations, will be completed later in the year.

Research on this Report has benefited substantially from information and recommendations from the South Ontario Economic Development Council and the Niagara Regional Advisory Board. Valuable assistance also has been forthcoming from other sources, especially provincial departments and agencies and, in particular, the Haldimand-Norfolk Study Group associated with the Department of Municipal Affairs.

The findings of the study are respectfully submitted for your consideration.

Yours sincerely,

Richard S. Thoman,
Director,
Regional Development Branch,
Department of Treasury and Economics

Encl.

It should be noted that many of the problems discussed in this Study were first identified by various other government departments, and in many cases policies and programs intended to alleviate them have been initiated.

FOREWORD

This Report is the first of a series to be prepared by the Regional Development Branch for Southwestern Ontario. It is concerned with analysis of the Niagara (South Ontario) Development Region's social, economic and physical resources, trends and problems. A succeeding Phase II report will recommend planning solutions and development policy for meeting the needs which have been identified. Similar studies will be carried out for the other development regions in Southwestern Ontario - Midwestern Ontario, Lake Erie and St. Clair - as well as for the rest of the Province.

Because of the impact of industrial development in the Nanticoke area, a special study of Haldimand and Norfolk counties is being prepared by the Department of Municipal Affairs. In order to ensure complete coordination between the two studies, the geographic coverage of this Report has been extended to include Norfolk County. Since Norfolk is a component of the Lake Erie Development Region, it will also be included in a study of the latter region, to follow.

This study required the cooperation and assistance of a great number of organizations and individuals. Particular thanks are due to: the South Ontario Economic Development Council, the Niagara Region Advisory Board, the Haldimand-Norfolk Study Group, the Niagara Escarpment Study Group, members of the business community, Industrial Commissioners, Planning Boards, Town Clerks, Canada Manpower Centre personnel, members of the academic community and various government departments. Special thanks are due to the Ontario Statistical Centre.

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SUMMARY

Three major trends are evident in the Niagara Region. First, the Region is, and will continue to be an area of growth; second, activity is currently concentrated along a northern arc; and third, there is a strong probability of a future development along the Lake Erie shoreline.

Growth Patterns The Niagara Region with a population of nearly one million people, is one of the fastest growing regions in the Province, as it has been for over a century. This sustained growth can be attributed in large part to three general factors: the Region's favourable location in the large Central Ontario market area, its proximity to the United States, and the presence of a combination of unique natural resources including tender fruit soils, tourist attractions such as Niagara Falls, and structural materials, some of which have continued to be marketable during the past one hundred years. These factors will continue to affect activity in the Region during the foreseeable future.

Growth Concentrations Development in Niagara has been concentrated in a narrow arc of land stretching from about Brantford in the northwest, to St. Catharines and Niagara Falls in the southeast.

Within this arc are the six major regional urban centres of Brantford, Burlington, Hamilton, Niagara Falls, St. Catharines and Welland, which together comprise 65 per cent of the regional population and account for a large proportion of the Region's secondary and tertiary economic activity.

A similar pattern of concentration exists with respect to the distribution of education, health, and cultural facilities such as libraries and museums. These facilities, therefore, tend to be relatively inaccessible to persons living in the southern and central portions of the Region.

The rural portions of this arc contain the specialized fruit growing zone as well as many of the Region's workable non-metallic mineral deposits.

While concentration within this area has produced many economies of scale, it has, at the same time, created diseconomies which have lead to many of the Region's problems.

Benefits derived from the concentration of activities include the high income levels enjoyed by the residents of the area, as well as the generally high calibre of its education, health and cultural facilities.

Diseconomies, however, are to be found in the process of "rurbanization" which has already eroded much of the productive

acreage of the fruit growing zone, the defacement of the Niagara Escarpment through the extraction of mineral deposits, and the general pollution of the area's water bodies.

Southern Extension of Regional Development The activities of Stelco and Texaco at Nanticoke and of Dofasco near Port Burwell are indications of the demand for industrial land in the southern portion of the Region, along the Lake Erie shoreline. When the shoreline is analysed in the context of its location within the emerging Great Lakes Megalopolis, it becomes apparent that whether or not these particular developments do occur in the future, pressures for industrial development in this portion of the Region will come to equal those which have been felt in the northern portion of the Region.

Problem Identification

Five general categories of regional problems have been identified: problems associated with the economic base, transportation problems, land use problems, environmental problems and social problems.

A. Economic Base

The four most important sectors of the economy are: manufacturing, agriculture, mining and tourism.

Manufacturing

1. There is a high proportion of slow growth industries in the Region, particularly in Brant, Lincoln and Welland counties.
2. The economic base of Haldimand and Norfolk counties lacks diversity.
3. At the time of the Survey of Manufacturers, there was a reported shortage of labour throughout the Region.
4. The presence of several high-wage requirement industries such as farm machinery manufacturers, particularly in Brant and Lincoln counties, has created labour-recruitment problems for many other industries. This is especially true of medium-size establishments which are prepared to pay a moderate wage for semi-skilled and skilled labour, and industries whose operations require low-wage, unskilled labour.
5. The loss of power-rate (electric) advantages, increasing transport costs and rising labour costs are causing a spatial shift in industrial location away from the eastern portions of the

Region. Many of the firms interviewed in Lincoln and Welland counties indicated that their original reasons for locating there no longer obtain.

6. While in general there is a reasonable amount of land available for industrial expansion, some areas are at present experiencing a shortage of serviced land.

Agriculture

1. The fruit growing industry is faced with a number of problems which together constitute a serious threat to its continued existence. Principal among the problems are a) fruit growing costs are rising faster than product prices, and b) potential profits from subdividing are often higher than those which can be derived from working the land. The combination of these factors is resulting in a yearly reduction in the amount of land remaining in fruit growing.
2. The future of the tobacco industry is uncertain.

3. Land with high agricultural capability in Haldimand County is not being used to its full potential.

Mining

1. In some areas the Region's mineral and natural gas reserves are being depleted rapidly. Alternative sources of employment and income will have to be found for workers engaged in the extraction of these resources.

Tourism and Services

1. There is a lack of coordinated development of public and private services and facilities.
2. There is a serious problem of road congestion at Niagara Falls.
3. Areas having prime recreational potential have been generally under-utilized. These areas are to be found throughout the Region and include the Niagara Escarpment, the Lake Erie and Lake Ontario shorelines and the Grand River Valley.

B. Transportation

1. There is general congestion along the Queen Elizabeth Way which has reduced regional road accessibility. Critical pressure points are located at or near Hamilton, St. Catharines and Niagara Falls.
2. Existing road, rail and harbour facilities serving the Nanticoke area are inadequate.
3. Accessibility to areas of high recreational use and potential, including the Escarpment and the shoreline of Lake Erie is inadequate to meet future demands.
4. The Welland Canal is reaching a level of high user congestion. Inadequate road crossings of the Canal have created road traffic congestion at some places.
5. Facilities at and accessibility to Hamilton Harbour are inadequate.

C. Land Use

1. Pressures of urbanization around the

Region's cities are resulting in the deterioration of the rural landscape. Areas of particular concern are the Hamilton-Burlington-St. Catharines Corridor and the St. Catharines-Niagara Falls-Port Colborne triangle.

2. The use of land adjacent to the Welland Canal has been uncoordinated and has resulted in the creation of an unsightly development corridor.
3. Unsightly, uneconomical strip development has occurred along the shorelines of both Lake Ontario and Lake Erie.
4. The Niagara Escarpment has been defaced unnecessarily in places by mining activities.

D. Environmental

1. The chemical pollution of the Region's air space and its water resources has been extensive. Air pollution has been especially serious in the Hamilton, Burlington and Dunnville areas. The potential for air

pollution resulting from industrial developments in the Nanticoke area merits serious consideration. Water pollution has reached serious levels in Lakes Ontario and Erie, the Niagara River, the Grand River, the Welland Canal and in many of the Region's smaller creeks.

2. The uncoordinated alignments of regional public utilities have detracted needlessly from the Region's scenic resources.

E. Social

1. There are relatively limited educational, health, cultural and social amenities in the central and southern portions of the Region.
2. The levels of meaningful participation in the Region's economic and social advantages achieved by both native indian and immigrant groups is well below that of the rest of the regional community.

CHAPTER I

INTRODUCTION

The Regional Development Program

In the Spring of 1966, the Provincial Government tabled its White Paper, Design for Development setting forth basic governmental policy for Ontario's emerging regional development program.

The White Paper and subsequent Cabinet announcements detailed certain fundamental regional development policies. These are:

1. That the vital role of the private sector be recognized, that its contribution to the provincial economy be continuously assessed in view of provincial needs and resources, and that provincial policies be formed to encourage a rational expansion of the private sector.
2. That individuals be encouraged to develop their full capabilities through provision of a climate of expanding social and economic opportunities for each region.
3. That regional and resource policies encourage adequate development of the natural environment while conserving the aesthetic qualities of that environment.

4. That the timing and impact of Ontario's large and expanding public expenditures be effectively planned and coordinated to fulfil, in an orderly way, the needs of the regions in the Province as well as of the Province itself.
5. That this be a Program for Regional Development which must necessarily involve a working partnership between all of the people of Ontario and government.

The institutional machinery established for implementing these policies includes a Cabinet Committee on Policy Development, chaired by the Prime Minister; an Interdepartmental Advisory Committee on Regional Development, chaired by the Deputy Treasurer and Deputy Minister of Economics; Regional Advisory Boards comprised of provincial field staff and Regional Development Councils with membership drawn from local governments and private groups.

The Regional Development Branch of the Department of Treasury and Economics is responsible for the preparation of regional plans. These plans, based upon recommendations of the Regional Development Councils and the Regional Advisory Boards, plus results of research from universities, from other Departments and from the Branch itself, will be presented in two consecutive reports - this Phase I analysis of trends and problems, and a subsequent Phase II report on planning policy recommendations. Both will be forwarded to the Regional Development Councils for

public reaction before consideration by the Cabinet Committee as policy.

The Background to this Report

The Regional Development Program has been undertaken in three stages. The Inventory stage, completed in 1967, was an assessment of all existing information, projects and policies of Ontario departments which were concerned with regional development. An active program of university research in regional development, also initiated that year, continues to contribute in-depth analysis of specific development issues.

The Evaluation Stage, completed in 1968, consisted of two parts. One involved the preparation of five-year program recommendations by the Regional Development Councils and parallel reports from the Regional Advisory Boards - both of which provided local evaluation of the nature of problems confronting each region. The other part, carried out by the Branch, involved the collection and assessment of some 63 statistical indicators of social and economic change for townships, counties and districts over the 1951-1966 period. The growth of each of these smaller areas was compared with the Province as a whole to provide a comprehensive evaluation of how each part of every region was faring in population growth, agriculture, manufacturing, services, city growth and other aspects of development.

The third planning stage begins with this Phase I report which is largely concerned with analysis of the Region's social, economic and physical resources, trends and problems.

Phase II will recommend planning solutions and development guidelines for meeting the needs identified in this report, including the selection of centres of opportunity. Special consideration will also be given to activities and planning considerations that are not specifically oriented towards centres of opportunity, in particular the resource-oriented industries and the social infrastructure.

Tentative regional development policies will then be formulated for the Region. These policies will be coordinated with the objectives of other Provincial Departments and restated as a series of alternatives. After due policy consideration at both provincial and regional levels, the best set of alternatives will be suggested as the Niagara Region's operating plan for its future development. These will then be submitted to the people of the Region for their comments and suggestions.

It should be noted that despite their functional value for purposes of administration or research, the boundaries of the ten regions are not regarded by the Government as being fixed for all time. Where development or other relevant circumstances warrant it, boundaries are subject to revision. Such boundary changes

would be preceded by full discussions with all local government units and Regional Development Councils affected and after careful evaluation of appropriate regional planning studies.

Aggregate Performance

Using 63 selected indicators of population and economic change, the performance level of each county in the Province has been compared with the performance of the Province as a whole.

Five levels of aggregate performance have been distinguished. These are:

- a. High

- b. Moderately High

- c. Intermediate (Provincial Average)

- d. Moderately Low

- e. Low

The Aggregate Performance Map (Figure 1) presents the results of this analysis. This map clearly demonstrates three important factors concerning development in the Niagara Region. First, no counties scored in either the "High" or "Low" performance categories; second, both Wentworth and Lincoln counties, which scored in "Moderately High" categories both front onto Lake Ontario, and third, Norfolk and Haldimand counties, both of which scored "Moderately Low" front onto Lake Erie. Brant and Welland counties both fall into the "Intermediate (Provincial Average)" category.

AGGREGATE PERFORMANCE AREAS, BY COUNTY
DATA SOURCES: 1951 THROUGH 1966

SOUTHERN ONTARIO

LEGEND

BOUNDARIES

- International
- Provincial
- Regional
- County or District
- Township
- NIAGARA (SOUTH)

Scale

0 10 20 30 40 50 60 70 80 90 100

High

Moderately high

Intermediate (Provincial average)

Moderately low

Low

figure 1

Regional Development Branch, Department of Treasury and Economics

CHAPTER II

PHYSICAL AND GEOGRAPHIC SETTING

Geographic Setting

Location The Niagara Region, covering an area of 2,794 square miles, is located within one of Eastern North America's major emerging development corridors.

Within southwestern Ontario itself, there have been two major axes of development in the past 25 years, the first along Highway 401 from Windsor to Toronto, and the second the "Golden Horseshoe" from Toronto to Niagara Falls along the shore of Lake Ontario. The third potential axis of growth is along the north shore of Lake Erie. The Region's past growth and future potential result from the fact that it lies across two of these growth axes within the emerging urban complex of southwestern Ontario.

More specifically, the Region has easy access to the major metropolitan markets of both southern Ontario and upper New York State. Because of cheap water transport through the Great Lakes, the Region traditionally has had a locational advantage for industries based upon the processing of bulky raw materials such as iron ore and wood pulp. Today its accessibility to urban markets gives it an added advantage for industries oriented towards the consumer market as well.

Basic Physiography and Geology

The Region contains several distinctive geological features. In particular, these are (a) the Niagara Escarpment, extending from Niagara Falls to the Bruce Peninsula and Manitoulin Island, (b) the Onondaga Escarpment running from Fort Erie to Hagersville, and (c) the intervening vales which slope gently to the south and west (see Figure 2).

The economic importance of these features will be analysed in later chapters, where agricultural potential based on soil type and fertility, recreational developments in various valley and escarpment locations, and mining and extractive industries will be discussed in greater detail, and the implications of man's use of the land will be considered.

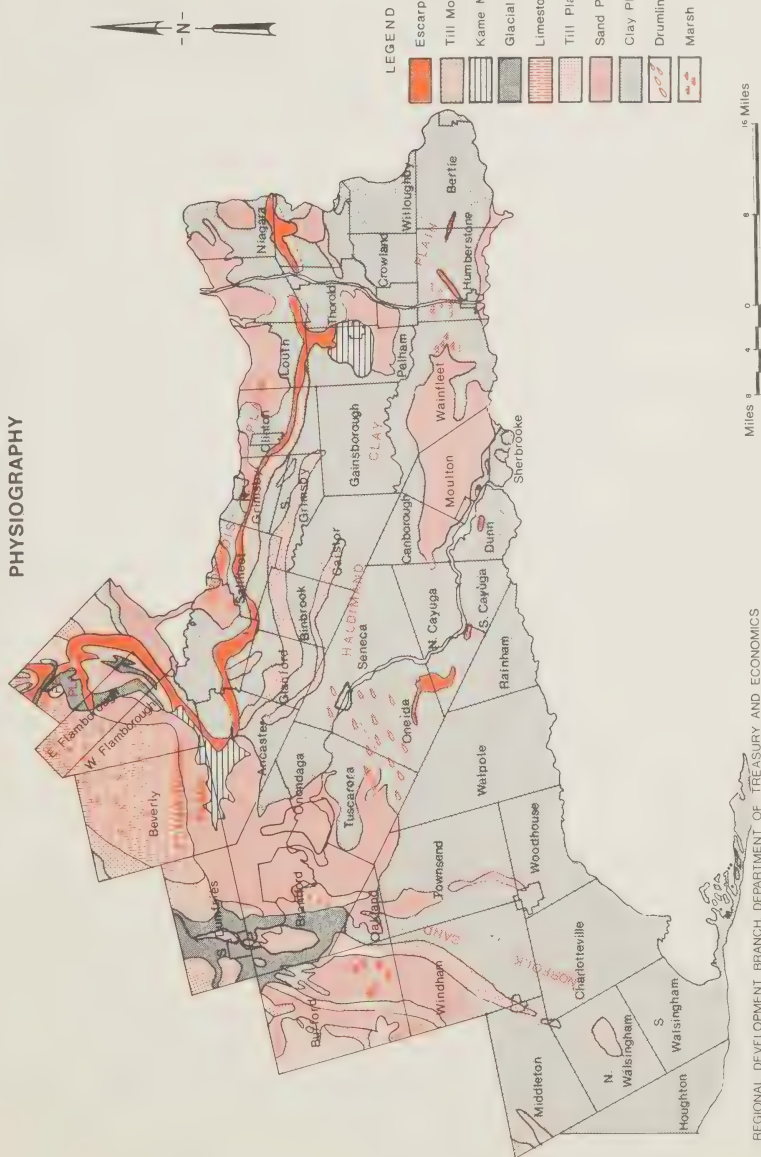
Climate

Unlike some other regions of Ontario, climate is not a limiting factor in the economic development of the Niagara Region. The proximity of two large bodies of water, Lake Erie and Lake Ontario, and the presence of the Niagara Escarpment constitute the major moderating elements.

Agricultural Resources

Much of the Niagara Region contains extensive areas of superior quality land best suited to mixed farming. In addition

PHYSIOGRAPHY



REGIONAL DEVELOPMENT BRANCH, DEPARTMENT OF TREASURY AND ECONOMICS
Source: Chapman and Pufnam; Ontario Research Foundation
Ontario Dept. of Lands and Forests

to the heavy soils of the livestock rearing and field crop areas there are two main areas of lighter soils devoted to specialized farming. The first covers much of the Lake Ontario shoreline, where fruit farming predominates on light well-drained loams. The second area covers much of the southwestern County of Norfolk and part of Brant, where the sandy soils favour the production of tobacco. Specialized fruit production is found to an increasing extent in Norfolk and Brant counties.

Recreational Resources

The attractions and the development of the Niagara Region as a recreational area may be directly linked to (a) the beauty of the physical environment, including the falls, escarpment, gorge and lakes; (b) the orchards and agricultural land at blossom time; (c) the accessibility both for Canadian and American visitors; (d) its cultural value as an area of historical interest.

At present, many of the recreational developments are concentrated along the northern and eastern sections of the Niagara Peninsula and, to a smaller extent, along the Lake Erie shoreline. The Grand River is an area of potential development where the combination of land and water resources may be utilized in similar fashion.

Mineral Resources

The mineral resources of the Niagara Region are mainly structural materials, the non-metallic mineral gypsum, and some

natural gas and oil. In some areas, reserves of fuels are minimal because development has been carried out for many years, but small off-shore deposits that have potential for development have recently been located. Much of the activity in the extraction of structural materials is in the immediate vicinity of the Escarpment.

Regional Water Supply

Because of its physical location with the two lakes and the Niagara River on three sides, the water supply in the Region is generally adequate for present needs. In addition to lakes Erie and Ontario, other sources of water include the Grand River, the Welland Canal, and underground sources such as artesian wells. After treatment, the water is of good quality.

Present Land Use

Figure 3 shows the present pattern of land use in the Niagara Region. Ten categories have been distinguished: residential, commercial and industrial, proposed industrial development, forest and woodland, agriculture and other rural land uses, public open space, extractive industry, large institutional holdings, Indian Reserves, airports and water bodies.

The major concentrations of urban uses, residential, industrial and commercial are contained in the Hamilton-Burlington-St. Catharines Corridor and the St. Catharines-Port Colborne-Niagara Falls triangle. Other concentrations are in the vicinity of Brant-

ford and Simcoe.

Along the Region's major transportation corridors, in particular, the Queen Elizabeth Way from Burlington to Niagara Falls, a process of intensification of urban uses is apparent. The initial stages in the development of a continuous urban corridor extending throughout the northern and northeastern parts of the Region can be clearly identified.

The future industrial developments around Nanticoke are shown on the map, (Figure 3). To the west of Nanticoke is the site of the Steel Company of Canada's new steel complex. On the Lake Erie shore to the east of Nanticoke is the Hydro generating station under construction. Also located in the area is the site for the proposed Texaco oil refinery.

Quarries, sand and gravel pits are found mainly along the Niagara Escarpment, traditionally a major source of Southern Ontario's structural materials. Other concentrations are found in the vicinity of Hagersville where gypsum is mined and around Brantford and Paris.

The largest single category of land use in the Region is agricultural (71 per cent).

Figure 3 shows the distribution of land in the Niagara Region now used for recreation and summer cottages. The major

areas of intensive recreational use lie along the Niagara River. Other important concentrations of recreational land can be found along the Niagara Escarpment and the Lake Erie shoreline from Long Point Provincial Park in the west to Port Colborne in the east.

Conflicts and Problems

The basic conflict arising out of the utilization of natural resources in the Niagara Region is between their use for immediate economic satisfaction and their long-term rational utilization.

Within the agricultural sector, there is the problem of urban sprawl and its consequent effects on valuable fruit lands. The areas of fastest urban growth are along the Hamilton-Burlington-St. Catharines Corridor and in the St. Catharines-Port Colborne-Niagara Falls triangle. These are placing great pressure upon good agricultural land.

In the development of recreational facilities there is the problem of ~~previously uncontrolled~~ water pollution both by industries and by local municipalities, and the defacing of scenic areas by extractive industries within the Escarpment. Ironically, in the development of tourist areas and tourist attractions, the aesthetic qualities of many areas are reduced by advertisements of objectionable size and sound - as seen in the area of Niagara Falls.

Professor John N. Jackson in Recreational Development and the Lake Erie Shore has demonstrated that uncontrolled development along the Lake Erie Shoreline detracts from its recreational potential.

CHAPTER III
SOCIAL AND ECONOMIC CHARACTERISTICS

Population

General Characteristics The total population of the Niagara Region was 945,576 in 1966.¹ This represented 14 per cent of the population of Ontario within 0.8 per cent of the Province's land area.

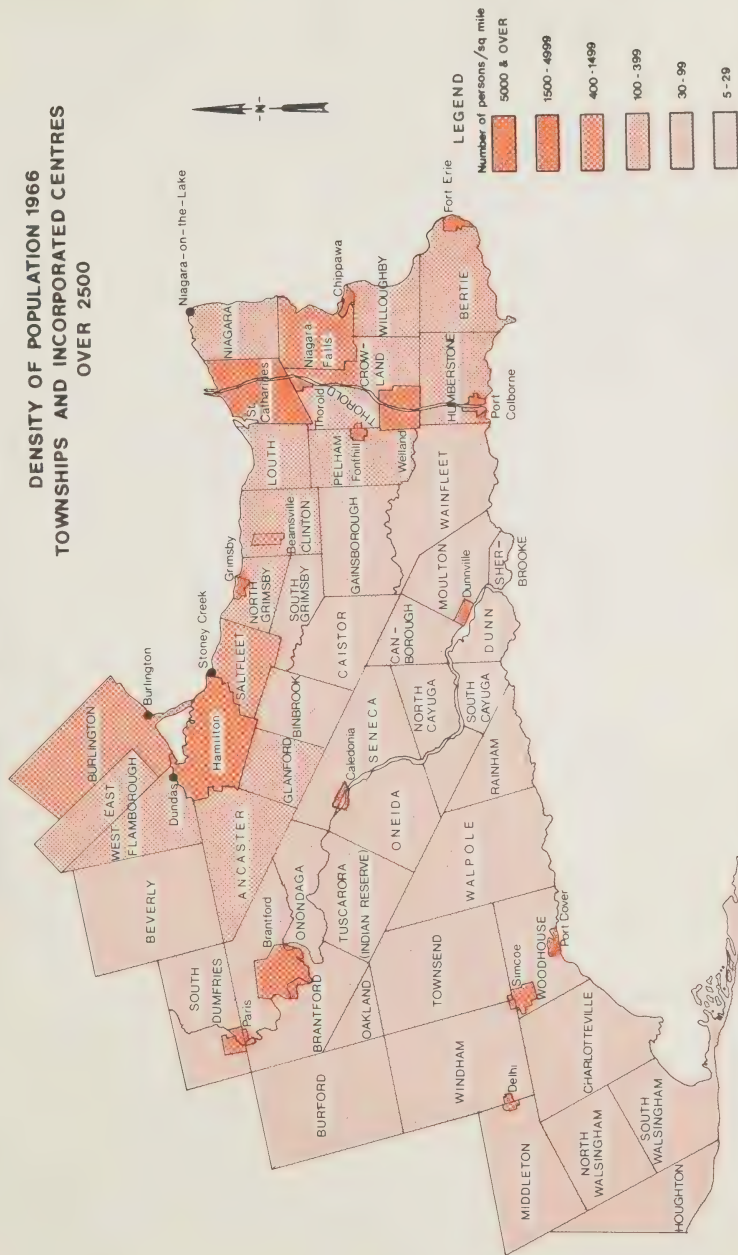
Within the Region, the greatest concentrations of population are in the north (See figure 4). The highest densities are in Wentworth (861 persons per square mile), Welland and Lincoln counties. Of the three, Lincoln experienced the most dramatic population growth, 64 per cent, greater than either Wentworth or Welland over the period 1951 to 1966. This rapid rate of growth was a direct result of its location between Wentworth and Welland counties, along a north-west to south-east axis of fast growth. The effect of the Niagara Escarpment and the existence of transport routes between Hamilton and St. Catharines have concentrated this population expansion in Lincoln County.

Two major population trends are apparent in Southern Ontario: first, the concentration of population in urban centres,

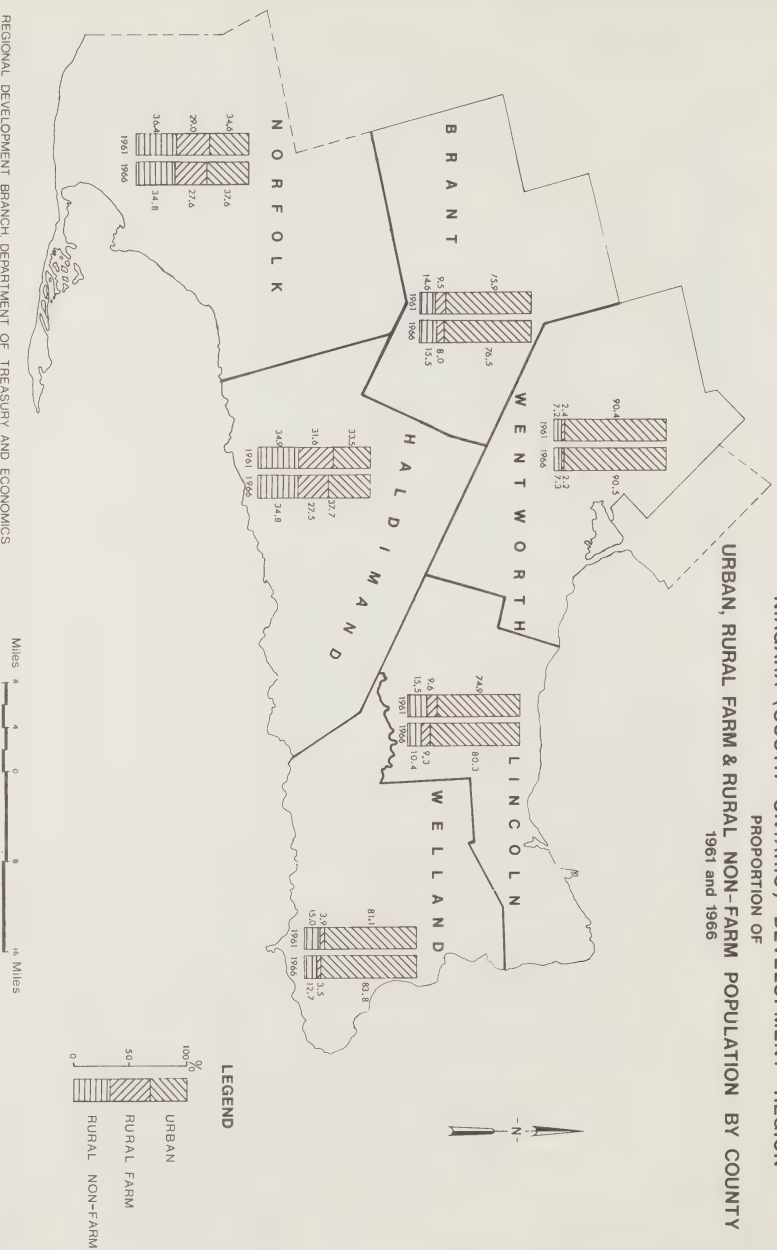
¹The Niagara Region as defined here includes Norfolk County and the town of Burlington.

NIAGARA (SOUTH ONTARIO) DEVELOPMENT REGION

DENSITY OF POPULATION 1966 TOWNSHIPS AND INCORPORATED CENTRES OVER 2500



NIAGARA (SOUTH ONTARIO) DEVELOPMENT REGION
PROPORTION OF
URBAN, RURAL FARM & RURAL NON-FARM POPULATION BY COUNTY
1961 and 1966



with attendant shifts out of the rural areas; second, the growth of the rural non-farm population in those areas accessible to major urban centres (See figure 5). Both trends are evident in the Niagara Region.

Figure 6 which shows the percentage change in population of townships, emphasizes the fact that the areas which experienced highest rates of change over the 1961 to 1966 period, were those most accessible to established urban centres. The initial stages in the development of urban corridors between Hamilton, Burlington and St. Catharines, and between St. Catharines and Port Colborne, can be clearly identified. The largely rural townships in the southern and western areas of the Niagara Region have had very low rates of population growth since 1951.

Age Structure The Niagara Region experienced its highest rates of growth between 1951 and 1966 in the younger age groups, 5-19, where the percentage change approximated 59 per cent. All counties except Norfolk showed an increase of over 60 per cent in these age groups during this period. This is of importance in an assessment of the employment and economic situation in the near future, as these younger groups represent the labour force potential of the Region.

Over 50 per cent of the population are in the wage earning age group which includes the most mobile and dynamic group, those between the ages of 20 and 24. The proportion of population

**TOTAL POPULATION, PERCENTAGE CHANGE, BY TOWNSHIPS,
1966/1951**

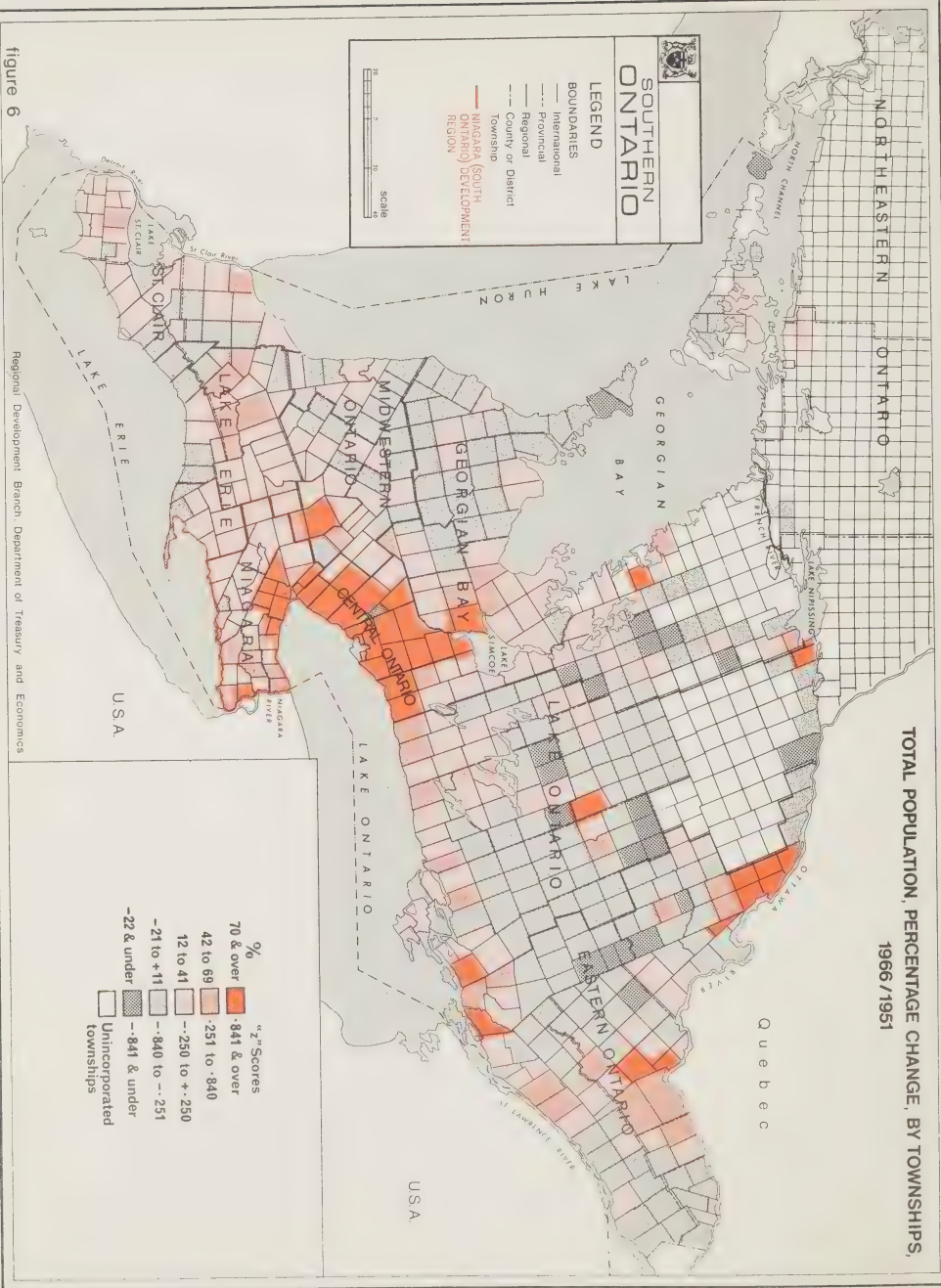


figure 6

Regional Development Branch, Department of Treasury and Economics

65 years and over was approximately nine per cent in the Region while the pre-school and public school age groups accounted for 31 per cent. It may, therefore, be concluded that as the younger age groups move into the labour force, the non-working members of the population supported by the labour force will constitute a declining proportion of the total - a very healthy regional trend.

Population Distribution by Ethnic Origin The Niagara Region has a heterogeneous population, composed mainly of European ethnic groups and small numbers of Asiatic and other groups. Most of the Indians live on the Six Nations Reserve in Brant County. In 1961 over 30 per cent of the Region's population was born outside Ontario.

Population Projections On the basis of demographic factors, the Economic Analysis Branch, Department of Treasury and Economics, has predicted a strong general upward trend in population totals within the Niagara Region.² By the year 1991, regional totals will approximate 1.12 million people. These demographic projections should not be confused either with population targets contained in Design for Development: Toronto-Centred Region or possible future population targets for the Niagara Region.

²Population projections include Norfolk County but exclude the Town of Burlington.

In view of the fact that social and economic conditions can operate to alter the trends of early projections, one can foresee redistribution in the Region's population within the next few decades. Early evidence of the expected shifts may be seen in current activity along the Lake Erie shore. The location of a basic industry, a steel mill at Nanticoke together with the Hydro plant and oil refinery, and plans for development of other industries and services in the area will result in population growth and expansion of existing urban centres in Haldimand and Norfolk Counties.

Labour Force

In 1961 the labour force was approximately 304,000. Manufacturing accounted for 37 per cent of the total, while trade, community, business and personal services accounted for 33 per cent. Less than eight per cent of the labour force was agricultural. Most people in the Region are employed in urban oriented activities, especially manufacturing and services.

An analysis of changes which occurred in the 1951 to 1961 decade revealed that the Region's proportion of the Ontario labour force declined from 14 to 13 per cent.

The main losses in this decade were in the manufacturing sector. Although rapid growth occurred in the tertiary sector this was not sufficient to compensate for losses in manufacturing. However, since 1961 the situation has improved.

Income

General Characteristics All indicators, except the average income per household showed that the Region, including Norfolk County but excluding the Town of Burlington for which data are not available, enjoyed a considerably higher income level in 1966 than did the Province. The average income per taxpayer in the Region exceeded that for the Province in 1951, 1961 and 1966, as did the rate of growth between 1951 and 1966. The average income per household increased at a faster rate in the Niagara Region than it did in the Province between 1961 and 1966. The distribution of household income is shown on Figure 7.

Urban-Rural Income Differences The rural counties of Norfolk and Haldimand have a substantially lower level of income than the rest of the Region. Average personal income in 1966 was \$3,827 in Haldimand and \$4,193 in Norfolk, compared with the regional average of \$4,741. Incomes in these two counties are improving much less quickly than in the Region so that they are tending to fall further and further behind. Many factors are contributing to this. The rate of return to the agricultural sector is lower than for other sectors of the economy. Rural counties tend to have a greater number of people to be supported by one income than do urban counties; rural families tend to have more children, which together with the relatively unbalanced age structure, and the lack of job opportunities for workers in

NIAGARA (SOUTH ONTARIO) DEVELOPMENT REGION DISTRIBUTION OF HOUSEHOLD INCOME BY COUNTY COMPARED WITH THE PROVINCE 1966

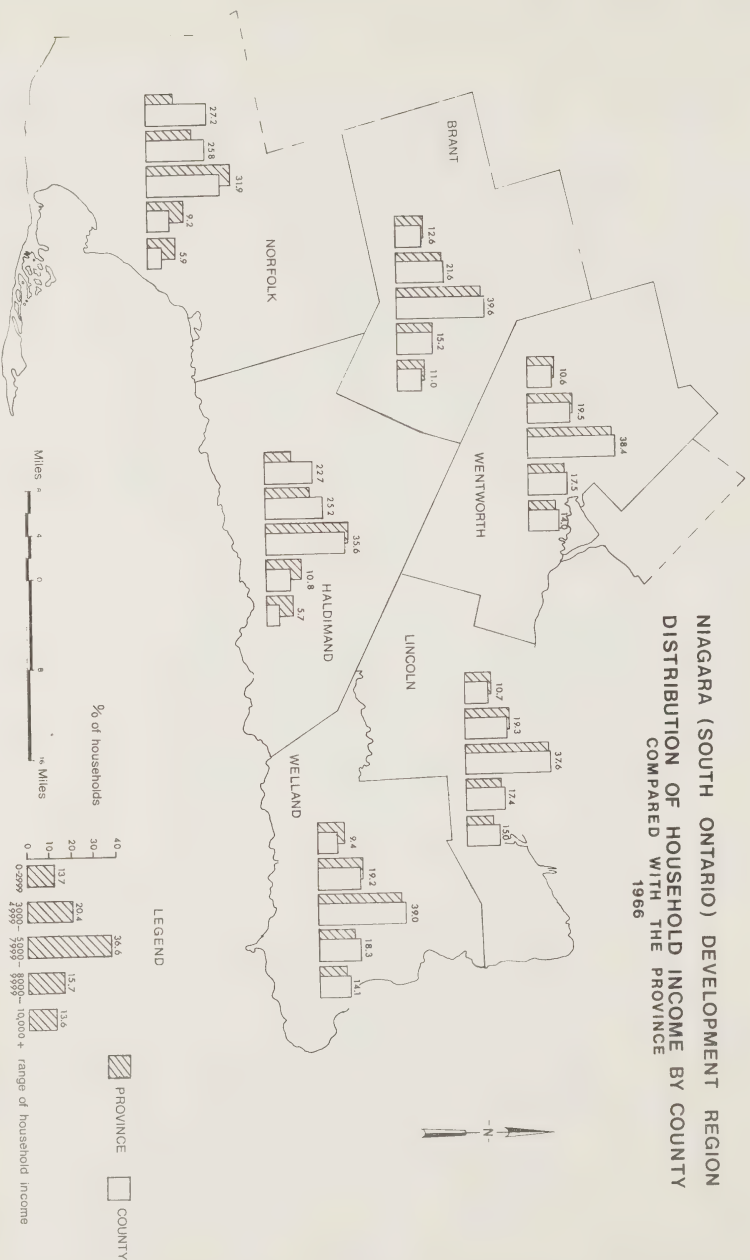


TABLE 3.1

INCOME FACTORS, NIAGARA REGION AND PROVINCE OF ONTARIO, 1961 AND 1966

| | PER CAPITA INCOME | | AVERAGE INCOME PER TAXPAYER | | AVERAGE PERSONAL INCOME | | AVERAGE INCOME PER HOUSEHOLD | | AVERAGE INCOME PER EMPLOYEE IN MANUFACTURING | |
|--|-------------------|------------------------------|--------------------------------|------------------------------|----------------------------|------------------------------|---------------------------------|------------------------------|--|------------------------------|
| | 1966 \$ | (2) % Change 1966/1961 | 1966 \$ | (3) % Change 1966/1961 | 1966 \$ | (5) % Change 1966/1961 | 1966 \$ | (7) % Change 1966/1961 | 1966 \$ | (9) % Change 1966/1961 |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| BRANT | 2,131 | 34.2 | 4,971 | 17.9 | 4,292 | 22.7 | 7,602 | 30.7 | 5,107 | 29.9 |
| Brantford | 2,212 | 30.4 | 5,044 | 19.7 | 4,375 | 24.0 | 7,633 | 26.9 | 5,235 | 30.5 |
| HALDIMAND | 1,660 | 35.1 | 4,780 | 16.7 | 3,827 | 16.1 | 6,038 | 33.3 | 3,903 | 21.7 |
| LINCOLN | 2,254 | 23.0 | 5,632 | 24.0 | 4,901 | 28.7 | 8,212 | 24.9 | 6,015 | 35.5 |
| St. Catharines | 2,274 | 13.7 | 5,683 | 23.8 | 4,979 | 27.6 | 8,205 | 24.1 | 6,177 | 34.5 |
| WELLAND | 2,228 | 34.7 | 5,322 | 18.3 | 4,565 | 21.5 | 8,069 | 28.0 | 6,021 | 20.6 |
| Niagara Falls | 2,348 | 33.3 | 5,363 | 20.7 | 4,572 | 26.3 | 8,169 | 25.3 | 5,750 | 26.3 |
| Welland | 2,332 | 20.3 | 5,254 | 19.9 | 4,560 | 22.0 | 8,970 | 23.4 | 6,118 | 19.3 |
| WENTWORTH | 2,203 | 29.1 | 5,575 | 20.2 | 4,947 | 23.6 | 8,213 | 26.7 | 5,941 | 20.0 |
| Hamilton | 2,255 | 29.2 | 5,575 | 20.1 | 4,947 | 23.4 | 8,328 | 26.4 | 6,003 | 19.6 |
| NORFOLK | 1,606 | 37.6 | 5,015 | 7.7 | 4,193 | 17.6 | 5,728 | 36.0 | 4,645 | 20.2 |
| TOTAL, NIAGARA REGION INCLUDING NORFOLK | 2,157 | 30.4 | 5,438 | 19.6 | 4,741 | 23.5 | 7,895 | 27.8 | 5,793 | 22.8 |
| TOTAL, PROVINCE OF ONTARIO | 2,117 | 32.0 | 5,398 | 20.0 | 4,686 | 22.5 | 7,970 | 27.6 | 5,572 | 24.5 |

Note: Data on town of Burlington not available.

Sources: Sales Management Magazine, 1962 and 1967.

Canada, Department of National Revenue, Taxation Division, Taxation Statistics, 1963 and 1968, Table 5 and Table 6.

Canada, Dominion Bureau of Statistics, Census of Manufactures, 1964 and 1966, (Ottawa: Queen's Printer), Section G, Geographical Distribution and Preliminary Bulletins.

secondary industry tend to reduce average income levels in rural areas. In order to improve the income levels of such areas, it is important to improve the industry mix so that it will contain a greater proportion of high wage industries.

Income Levels in Manufacturing An examination of average wages and salaries per employee in manufacturing showed a high level of correlation between wages paid in manufacturing and average personal incomes. In both the Niagara Region and the Province as a whole, research indicated that those counties with a low average personal income were also those counties having a low manufacturing wage level. This may be explained by a combination of factors but basically, low wage industries locate in low wage areas. Many low wage industries interviewed in the Niagara Region indicated that their locations were favourable so long as high wage industries did not move into their immediate area to capture the labour market. Similarly, industries requiring a high level of skill must locate in an urban setting where the skills are readily available. The fact that Lincoln and Wentworth counties have levels of both average personal income and average income per taxpayer above the regional average suggest that they have a very favourable industry mix.

Education

Introduction Recent studies suggest that education is one of the most significant variables in economic growth. The

Economic Council of Canada, in its Second Annual Review, pointed out that the income of individuals is in general closely related to the extent of their schooling, and that the rates of return from increased investment in education appear to compare favourably with the returns from other kinds of investment. Not only does such investment in human capital benefit individuals through higher incomes and better quality of life, it also benefits the community in the increase productivity of its labour force. In addition, quality of labour is an important variable considered by industrialists when choosing a new location. Thus the level of educational attainment by the Region's adult population is a reflection of the present labour quality, and the existing school population structure and the associated educational facilities are indicative of the potential of the Region's prospective labour force.

Educational Levels in the Adult Population In Ontario in the period 1951 to 1961 there was a general improvement in the educational level of the adult population. The Niagara Region, however, fell behind the Province in raising its level of educational achievement, particularly with regard to its proportion of highly educated persons essential to the continued economic growth in any industrial economy.

In the adult population, the proportion of those with only Grade 8 education or less declined more slowly in the Region than in the Province over this period and the proportion of those with

TABLE 3.2

SECONDARY SCHOOL SURVIVAL RATES, NIAGARA REGION AND PROVINCE OF ONTARIO, 1962 TO 1966

| | | 1962 | 1963 | 1964 | 1965 | 1966 |
|--|----------------|----------------|-----------------|-----------------|-----------------|-----------------|
| | | <u>Grade 9</u> | <u>Grade 10</u> | <u>Grade 11</u> | <u>Grade 12</u> | <u>Grade 13</u> |
| | | No. | No. | No. | No. | No. |
| | | (1) | (2) | (3) | (4) | (5) |
| BRANT | No. | 1,500 | 1,197 | 967 | 810 | 458 |
| | % ^a | 100.0 | 79.8 | 64.5 | 54.0 | 30.5 |
| | % ^b | | | 80.8 | 83.8 | 56.5 |
| HALDIMAND | No. | 644 | 499 | 385 | 317 | 159 |
| | % ^a | 100.0 | 77.5 | 59.8 | 49.2 | 24.7 |
| | % ^b | | | 77.2 | 82.3 | 50.2 |
| LINCOLN | No. | 2,338 | 1,934 | 1,694 | 1,445 | 837 |
| | % ^a | 100.0 | 82.7 | 72.5 | 61.8 | 35.8 |
| | % ^b | | | 87.6 | 85.3 | 57.9 |
| WELLAND | No. | 3,307 | 2,807 | 2,369 | 2,004 | 886 |
| | % ^a | 100.0 | 84.9 | 71.6 | 60.6 | 26.8 |
| | % ^b | | | 84.3 | 84.6 | 44.2 |
| WENTWORTH | No. | 5,980 | 5,004 | 4,116 | 3,377 | 1,963 |
| | % ^a | 100.0 | 83.7 | 68.8 | 56.5 | 32.8 |
| | % ^b | | | 82.3 | 82.0 | 58.1 |
| NORFOLK | No. | 920 | 755 | 641 | 547 | 255 |
| | % ^a | 100.0 | 82.1 | 69.7 | 59.5 | 27.7 |
| | % ^b | | | 84.9 | 85.3 | 46.6 |
| TOTAL, NIAGARA REGION INCLUDING NORFOLK COUNTY | No. | 14,689 | 12,196 | 10,172 | 8,500 | 4,558 |
| | % ^a | 100.0 | 83.0 | 69.2 | 57.9 | 31.0 |
| | % ^b | | | 83.4 | 83.6 | 53.6 |
| TOTAL, PROVINCE OF ONTARIO | No. | 114,665 | 99,040 | 77,922 | 67,282 | 35,007 |
| | % ^a | 100.0 | 86.4 | 68.0 | 58.7 | 30.5 |
| | % ^b | | | 78.7 | 86.3 | 52.0 |

^aSurvival rate calculated with 1962 = 100.^bCumulative survival rate calculated with previous year = 100.Source: Calculated from Secondary School Enrolment Projections, Ontario Institute for Studies in Education.

Grade 13 and over grew less quickly. However, an examination of the Region's 15 to 19 age group indicated that it was the only one with a better educational structure than the Province. As this and younger groups move upwards through the educational system and into the general population, the disparities between the Region and the Province will tend to disappear.

This poor educational structure in 1961 might be due to a number of factors including poorer attainment of those in school before 1961, out-migration of the better educated members of the population, or the in-flow of less well educated migrants.

It is, however, the intra-regional differences which are particularly significant for regional development as considerable variations exist within the Region in the educational level of the adult population. The County of Lincoln closely approximates the provincial average in years of schooling. Norfolk and Haldimand, however, show a marked deviation from this average, and considerably reduce the educational level of the Region as a whole because about half of their combined adult populations have only eight years or less of schooling.

Educational Facilities and Programs The Region is well-endowed with post-secondary educational institutions, having two universities, two expanding community colleges, two teachers' training colleges, a considerable number of hospitals with training

facilities, and a variety of private commercial and technical schools. However, almost all facilities are concentrated in the urban counties of Wentworth, Welland and Lincoln, particularly in Hamilton and St. Catharines, leaving students from rural areas no choice but to travel considerable distances or to move.

Although the level of education of the adult population of the Region as a whole is below the provincial average, the performance rates of school children are slightly better. Norfolk and Haldimand have the lowest educational levels in the adult population, but the anticipated developments at Nanticoke will create additional employment opportunities which may encourage school leavers and others who might otherwise migrate, to stay within these counties. Thus, the levels of education in the adult population of these counties can be expected to increase as development proceeds. Provided the Region does not lose a significant proportion of the better educated students graduating from its educational institutions, the educational levels of the labour force may be expected to improve in future.

Health

The level of provision of health facilities such as hospitals and clinics, and the distribution of doctors and dentists, are significant indicators of intra-regional disparities in the social and cultural infrastructure of a region, particularly when evaluated in association with data on such factors as educational

and cultural facilities.

In Ontario in 1966, there were 759 people per doctor, and 2,661 people per dentist. When these figures are compared with the Niagara Region, in which there were 821 people per doctor and 2,921 per dentist, it is apparent that the Region is rather less well provided for than is the Province. On a county basis, only the inhabitants of Wentworth County have a higher level of service than do the people of Ontario. It is particularly significant that the rural counties of Norfolk and Haldimand are almost twice as badly off as Wentworth.

Approximately 80 per cent of the doctors live in the six major centres of Hamilton, Burlington, St. Catharines, Brantford, Niagara Falls and Welland, which account for 65 per cent of the Region's population. In contrast, the counties of Norfolk and Haldimand which account for eight per cent of the Region's population, have only five per cent of the Region's doctors, and of the doctors in these two counties, over half are located in Simcoe or Dunnville, leaving the small centres very poorly provided for.

In 1966, the ratio of population to hospital beds for the Province was one bed per 156 people. The level of provision in the Region was almost the same, one bed per 155 people. Both Brant and Wentworth counties had a better level of provision than this, while Haldimand and Norfolk were significantly worse, 221 persons and

331 persons per bed, respectively. More significant than county ratios, however, is the distance people have to travel to reach a hospital, since people are not influenced by county boundaries in their choice of a hospital, but by proximity and facilities available. All centres over 5,000 population in the Region have at least one hospital, except for Dundas and Stoney Creek, which are very near Hamilton. It should be noted that people living in the northwestern parts of Norfolk County use the medical facilities available at Tillsonburg in the Lake Erie Development Region.

Recreation

Tourism has been one of the fastest growing sectors of the provincial economy in recent years, accounting for approximately 10 per cent of the gross provincial product. As one of the most popular tourist areas in the Province, the Niagara Region has not only participated in this growth, but has also been in part responsible for it. Income generated by tourism in the Niagara Region is estimated to be about six times higher than the provincial average, making tourism of great importance to the Region's economy.

The Region is very much an international tourist area, and the proportion of American to Canadian visitors is one of the highest in the Province. The majority of visitors are American; further, they are responsible for over 75 per cent of the visitor expenditures in the Region. The Region is easily accessible to the populated areas of both Ontario and New York. The Niagara peninsula

per cent decline in the number of establishments, their average size almost doubled in the ten years 1955-1965, from 12.1 to 22.7 units, and the average size of licensed establishments increased from 29.1 to 36.3 units.

The growth in the number of units (in all establishments both with and without liquor licenses) has been concentrated in Welland and Wentworth. Through out the rest of the Region, numbers have increased slowly.

Cottages Other facilities include cottages, campsites and parks. One of the more important cottage areas in Southern Ontario is along Lake Erie and much of its shoreline is occupied by cottage lots. These cottages are generally smaller and less expensive than those on the Canadian Shield. About 95 per cent of the rural residents who occupy the Niagara Region seasonally are found in the three counties along Lake Erie. Of these, Haldimand County contains the greatest proportion by far. This could be due to the waterfront activities on the Grand River as well as the Lake Erie shoreline. Cottages are owned predominantly by people who live either within the Region or just outside of it; many of the large number of American owners are residents of Buffalo.

Camping As camping has become more popular, the number of commercial sites licensed in the Niagara Region has increased from 34 in 1965 to 77 in 1969. The number of tent and trailer

sites within these campsites has expanded from 2,211 in 1965 to 5,590 in 1969.³ Thirty-three per cent of the total number of establishments are located in Welland County on 28 per cent of the Region's campsite area. However, 37 per cent of the Niagara Region's campsite acreage in capacity is located in Norfolk County.

Parks The Niagara Parks Commission system is the most important of all the Region's parks. It provides 3,500 acres and has over 13 million visitors per year. Also, there are four Provincial Parks, all located along the northern shore of Lake Erie. Together they include 1,974 acres, and in 1969 they were visited by 589,089 people.

These parks all contain tent and trailer sites and facilities for swimming and boating. At Long Point there is a migratory bird concentration and observation centre, and Turkey Point includes a nine hole golf course.

There are two relatively large municipal parks, the Hamilton Botanical Gardens (1,900 acres) and Haldimand County Park (90 acres). Other municipal parks mainly serve more immediate local needs.

³The 1965 figures do not include Norfolk County.

CHAPTER IV

THE ECONOMIC BASE

Introduction

The purpose of the economic base study is to gain a comprehensive understanding of the structure and functioning of the regional economy. This study is fundamental to the preparation of detailed regional development plans.

Agriculture

The most important primary activity in the Niagara Region is agriculture, following by mining. Fishing and forestry play only a minor role in the regional economy.

In an industrialized and rapidly urbanizing region such as Niagara, the agricultural sector would be expected to decline in relative importance as the manufacturing and tertiary sectors increased. In Ontario between 1951 and 1961, the labour force in agriculture declined by 16 per cent. In the Niagara Region, however, with a greater proportion of its labour force in agriculture, there was only a 3.5 per cent decline in agricultural workers over the same period. This suggests that the Region's considerable importance as an agricultural area is likely to continue.

Analysis of selected agricultural indicators reveals that

two broad trends have been taking place within the Region. First, there has been considerable pressure upon agricultural land around urban areas. In 1951, over four-fifths of the 1.75 million acres of land in the Region were farmland. By 1966 this had declined to below three quarters. The second trend has been towards intensification of agriculture in many parts of the Region.

↓ Within the Region, there are two very important areas of local specialization, the fruit belt north of the Escarpment, and that part of the tobacco growing belt that extends into Norfolk and Brant counties. Specialized fruit production is also found in Norfolk and Brant counties.

Norfolk and Brant counties contain some of the most prosperous agricultural areas in the Region and in both counties there have been increased acreages of improved farmland accompanied by a decline in the number of farms.

The increase in average size of farms, farm capital value and value of field crops sold demonstrates the trend towards larger, more capital intensive enterprises.

The County of Haldimand, together with neighbouring townships along the Lake Erie shoreline, comprise the poorest agricultural area in the Region.

In several townships in this area, the acreage of improved

farmland increased between 1951 and 1966, while total acreage of farmland declined, suggesting that with rationalization, the area does have considerable agricultural potential. In such areas, where income levels are low and out-migration is dominant, the introduction of alternative economic activity would offer marginal farmers the opportunity of fitting into an urban pattern. If living within commuting distance of an urban centre, farmers could, with the help of retraining, take advantage of any job opportunities available.

The greatest pressure on agricultural land is not, as is usually supposed, around Hamilton and along the Lake Ontario shoreline, severe though this pressure is. Rather, it is in the eastern section of the peninsula around St. Catharines, Niagara Falls and Welland. In many of these townships, more than 20 per cent of the improved farmland was converted to other land uses between 1951 and 1966. The number of farms declined by 31 per cent in this area, but the decline in total farmland was less severe. This suggests that there is an intensification of the farming that remains, in order to serve the demands of the growing urban population.

The presence of urban shadow around cities is suggested by the 165 per cent increase in the ^{market} value of land and buildings in Welland County over the 15 year period 1951 to 1966. Similar forces are at work in the area surrounding Hamilton and Burlington. The number of farms has declined by 27 per cent while the ^{market} value of land and buildings has increased by over 200 per cent.

The Fruit Belt For many years, there has been increasing public concern, both among the people of Ontario and among the inhabitants of the Niagara Region about the encroachment of urban land uses upon the fruit lands of the peninsula. Two major reports on this problem have been undertaken for the Regional Development Branch. Within the Branch, the Niagara Escarpment Study, Fruit Belt Report¹ was completed in August, 1968, under the direction of Professor L. O. Gertler. In March, 1969, the Niagara Region Agricultural Research Report: Fruit Belt² by Professor L. G. Reeds, became available.

The Niagara Region's unique combination of soils, climate and physical setting for fruit growing is well known. The basic fact is that the tender fruit soils are limited in extent. Of the original 40,000 acres, only 26,300 were left for full-time fruit growing by 1965. The Fruit Belt Report estimated that if present trends continue, the built up area will double in extent by 1996. By this time, 51,800 acres of additional urban land will be needed, particularly for residential expansion. The total needs for the area, including those for agriculture, will be 40,000 acres more than the total land available. Under such conditions, the fruit belt will inevitably disappear.

¹Niagara Escarpment Study Group, Niagara Escarpment Study: Fruit Belt Report, Regional Development Branch, Department of Treasury and Economics, Aug., 1968.

²L. G. Reeds, Niagara Region Agricultural Research Report: Fruit Belt, McMaster University, Hamilton, Ontario, March, 1969.

Existing municipal policies and plans, as outlined in the Niagara Escarpment Study, appear to be accelerating this process.

Both studies indicate that the core of the problem lies in the process of "rurbanization", consisting of the creation of land uses that are on a continuum between urban land uses and full-time farming. As the urban areas increase, so the land prices on their fringes increase and many undesirable side effects result. Farms become subdivided into uneconomically small units. Land speculation causes farmland to lie idle and deteriorate in quality, possibly becoming affected by disease, weeds and insect pests. The more profitable farms cannot afford to expand, and are adversely affected by the deteriorating quality of nearby land. The declining rate of returns from fruit production resulting largely from fruit prices rising less quickly than production costs, together with the importing of wine and canned fruit from areas outside Ontario have caused a loss of confidence on the part of farmers in the future of their industry and a corresponding unwillingness to invest in improvements.

While it is already too late to preserve many areas of farmland, drastic action should be taken to ensure the survival of those areas which are still economically viable.

Fruit farming is only competitive with other land uses so long as land prices per acre do not exceed \$2,262, according to Professor Reeds. Only in Clinton, Niagara and Pelham townships are 1

land prices still less than this. Professor Reeds recommends strongly that the core areas of tender fruit land, approximately 10,240 acres of first class land in the townships of Clinton, Louth, Niagara and Pelham, be preserved. As yet, these farms are in general unaffected by urban sprawl, and still well managed. Also recommended are measures to stimulate fruit farming such as anti-dumping regulations, tax reductions, loans and further research into diseases and the development of new varieties of fruit.

Mines, Quarries and Oil Wells

The Niagara Region accounted for only 3 per cent of the total value of mineral production in Ontario in 1966. This small proportion, however, amounted to 100 per cent of Ontario's gypsum, 25 per cent of its natural gas, and 13 per cent of its structural materials.

In terms of employment, this sector is relatively unimportant. In 1961 employment in mines, quarries and oil wells represented only 972 persons or 0.3 per cent of the Region's labour force.

The value of mineral production, however, has continued to rise and, in 1966, reached a total of \$28.6 million. This represented an increase of 46.5 per cent during the period 1961 to 1966.

Within the Region, one may conclude that (a) the future of the mining of structural materials depends upon a steady and increasing demand for these materials from roads, housing and general

construction; (b) the reserves of structural materials are expected to last for a few more decades provided there is controlled extraction in the face of increased demand; (c) there is great conflict between the economic importance of mining and quarrying, and the recreational and aesthetic use of land in the Escarpment areas near the main markets; (d) there is need for alternative sources of employment and income for the workers in the fuel industries in the almost depleted fuel producing areas.

Forestry

Forestry in the Niagara Region is at present of very limited economic significance. Well managed woodlots, however, would enhance the Region. They would (a) provide recreational opportunities; (b) control soil erosion due to flooding, especially in Haldimand-Norfolk and other agricultural areas; (c) windbreaks in sandy areas would reduce wind erosion; (d) the Region is capable of producing high quality hardwoods such as walnut; (e) enhance the Region's natural beauty and aesthetic value; (f) afford environmental protection for fish, wildlife and waterbodies.

Fishing

Fishing plays a minor role in the Region in terms of employment. As recorded from fishing licences, 253 men were listed as fishermen in 1961, of whom 236 lived in the counties of Norfolk and

Haldimand, especially in Port Dover and Port Maitland.

In 1968, 12.8 million pounds valued at \$601,061 were caught in the Region. Despite the considerable increase in size of catch, there was a shift from high to low price species, resulting in a decline in dollar value of fish caught between 1961 and 1968.

~~The problem of declining revenues from fishing may be solved through the use of~~ Further research is needed to determine the effect of pollution, particularly thermal pollution will have on the future of the fishing industry in this lake.

~~There is a need to study the future of the fishing industry in this lake.~~ There is at present, a considerable demand for Great Lakes fish in the United States, and given improved marketing facilities in Canada, it seems that fishing could become a successful small scale local industry, if combined with alternative sources of employment in the winter months.

Manufacturing

General Characteristics The importance of manufacturing in the Niagara Region to both the Region and the Province is clearly demonstrated by the fact that in 1966, the Region contained 12 per cent of the manufacturing establishments in Ontario, and accounted for 17 per cent of the Province's employment in manufacturing.

Within the Region, 37 per cent of the labour force was involved in manufacturing, compared with 27 per cent for the Province. Despite this concentration of employment, the Region is performing

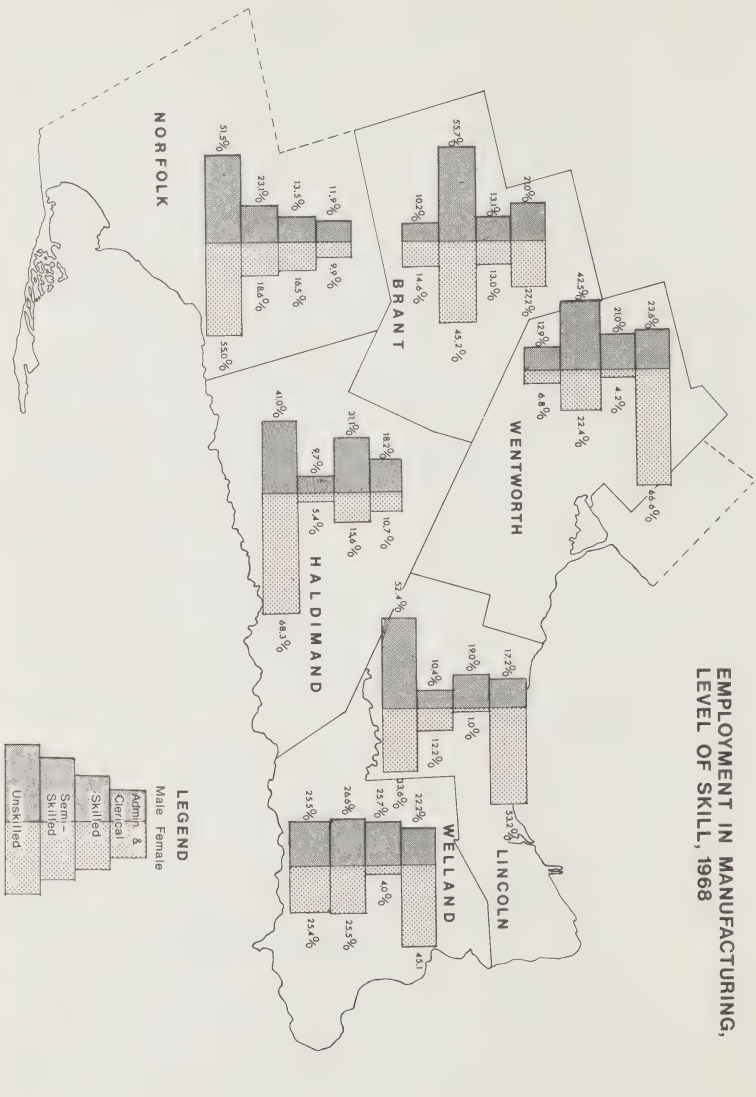
NIAGARA (SOUTH ONTARIO) DEVELOPMENT REGION

EMPLOYMENT IN MANUFACTURING, MALE-FEMALE COMPOSITION, 1968



NIAGARA (SOUTH ONTARIO) DEVELOPMENT REGION

EMPLOYMENT IN MANUFACTURING, LEVEL OF SKILL, 1968



significantly below the Province in the growth of the manufacturing sector. Value of output (shipments) in the Region reached \$3,342 million in 1966, an increase of 61 per cent over 1961, compared with a 68 per cent increase in the Province as a whole. Similarly, total value added at \$1,620 million increased by 60 per cent over the period, compared with 66 per cent for Ontario.

There have been indications of significant problems since 1951. Manufacturing in the Region experienced a decline, both in absolute and relative terms, during the 1951 to 1961 decade. This trend reversed between 1961 and 1966, perhaps reflecting the general recovery of the economy as a whole. Since 1966, however, there have been signs of another decline. The Region experienced a loss of nearly 14,000 jobs from 1956 to 1960, but gained approximately 30,000 jobs from 1961 to 1966, a net increase over the entire ten-year period of 13 per cent.

Another serious problem was the Region's rapidly declining share in the number of plant expansions and new manufacturing firms established in Ontario. In 1961 the Region attracted over 12 per cent of the new establishments that located in the Province that year. By 1964 this share had increased to over 18 per cent, but by 1968 it had dropped to five per cent, showing that the Region was progressively less able to attract new industries.

When these trends are examined on a county basis in terms

of the balance between establishments entering and leaving the Region, considerable intra-regional variations become apparent. While there were slightly more manufacturing establishments entering the Region between 1961 and 1966 than left it, Welland County suffered a serious net loss. Lincoln and Wentworth gained approximately as many establishments at the end of the period than they had at the beginning. The remaining three counties showed a small net gain. It therefore seems that the most industrialized areas of the Region have been those with the greatest problems both in attracting new industries and in retaining those already present. In addition, the eastern parts of the Niagara Peninsula have experienced overall declines in the manufacturing sector.

Growth Industries in the Niagara Region All 20 of the Major Industrial Groups identified by the Dominion Bureau of Statistics are to be found in the Niagara Region. Of these, the basic or export oriented industries are the manufacturers of primary metals, non-metallic minerals, machinery and textiles, as well as metal fabricating plants and knitting mills. The particularly fast growth industries in Ontario between 1961 and 1966 were the transportation equipment, electrical products, machinery and metal fabricating groups. Two of the Niagara Region's basic industries are amongst the Province's growth industries.

The inquiry into the effects of the composition of manufacturing in the Niagara Region indicates that there are conflicting

TABLE 4.1

RELATIVE GROWTH CLASSIFICATION, MANUFACTURING INDUSTRIES, NIAGARA REGION^a, 1961 - 1964A - Industries growing more rapidly than average in both the Region and the Province

| | <u>TOTAL EMPLOYMENT IN REGION</u> | | | <u>% Of 1964^b Regional Total</u> | <u>% Of 1964^b Provincial Total</u> | <u>Location Quotient</u> |
|--------------------------|-----------------------------------|-------------------------|------------------|---|---|------------------------------|
| | <u>1961</u> | <u>1964^b</u> | <u>% Change</u> | | | |
| | <u>No.</u> | <u>No.</u> | <u>1964/1961</u> | | | |
| | <u>(1)</u> | <u>(2)</u> | <u>(3)</u> | <u>(4)</u> | <u>(5)</u> | <u>(6)</u> |
| Transportation Equipment | 9,059 | 13,490 | 48.9 | 11.2 | 11.4 | 0.98 |
| Machinery Industries | 8,920 | 11,104 | 24.5 | 9.3 | 6.0 | 1.55 |
| Furniture and Fixtures | 470 | 573 | 21.9 | 0.5 | 2.5 | 0.20 |
| Electrical Products | <u>7,539</u> | <u>8,828</u> | <u>17.1</u> | <u>7.4</u> | <u>9.7</u> | <u>0.76</u> |
| | 25,988 | 33,995 | 30.8 | 28.4 | 29.6 | 0.96 |

B - Industries growing more rapidly than average in the Region and less rapidly than average in the Province

| | | | | | | |
|-----------------|---------------|---------------|-------------|-------------|------------|-------------|
| Wood Industries | 617 | 810 | 31.3 | 0.7 | 2.3 | 0.30 |
| Primary Metals | <u>23,864</u> | <u>28,079</u> | <u>17.7</u> | <u>23.4</u> | <u>8.4</u> | <u>2.79</u> |
| | 24,481 | 28,889 | 18.0 | 24.1 | 10.7 | 2.25 |

C - Industries growing less rapidly than average in the Region and more rapidly than average in the Province

| | | | | | | |
|-----------------------|--------------|--------------|-------------|------------|------------|-------------|
| Metal Fabricating | 12,011 | 13,319 | 10.9 | 11.1 | 9.5 | 1.17 |
| Non-Metallic Minerals | 5,327 | 5,910 | 10.9 | 4.9 | 3.3 | 1.48 |
| Textile Industries | 4,570 | 4,953 | 8.4 | 4.1 | 3.6 | 1.14 |
| Miscellaneous | <u>2,920</u> | <u>2,708</u> | <u>-7.3</u> | <u>2.3</u> | <u>5.2</u> | <u>0.44</u> |
| | 24,828 | 26,890 | 8.3 | 22.4 | 21.6 | 1.04 |

D - Industries growing less rapidly than average in both the Region and the Province

| | | | | | | |
|-----------------------------|--------------|--------------|-------------|------------|------------|-------------|
| Clothing Industries | 1,202 | 1,322 | 10.0 | 1.1 | 3.3 | 0.33 |
| Chemicals | 4,464 | 4,816 | 7.9 | 4.0 | 5.1 | 0.78 |
| Leather Industries | 675 | 719 | 6.5 | 0.6 | 2.0 | 0.30 |
| Food and Beverages | 9,269 | 9,705 | 4.7 | 8.1 | 11.9 | 0.68 |
| Paper and Allied Industries | 6,146 | 6,300 | 2.5 | 5.3 | 5.6 | 0.95 |
| Printing and Publishing | 2,362 | 2,388 | 1.1 | 2.0 | 5.3 | 0.38 |
| Knitting Mills | <u>2,088</u> | <u>1,932</u> | <u>-7.5</u> | <u>1.6</u> | <u>1.2</u> | <u>1.33</u> |
| | 26,206 | 27,182 | 3.7 | 22.7 | 34.4 | 0.66 |

^aExcludes Norfolk County for which separate data are not available.^bExcludes rubber industries, for which 1961 data are not available, and industry groups for which data cannot be published.Sources: Canada, Dominion Bureau of Statistics, Manufacturing Industries of Canada, 1964, (Ottawa: Queen's Printer), Table 6.Canada, Dominion Bureau of Statistics, Manufacturing Industries of Canada, 1964, Special Tabulation.

tendencies, but that these seem to neutralize one another in such a way that the Region could possibly experience changes in total manufacturing activity similar to those in the Province in future. To arrive at this conclusion, the 20 Major Industrial Groups in the Region were grouped into four classes as shown on Table 4.1. These were:

- A) Industries growing more rapidly than average in both the Region and the Province.
- B) Industries growing more rapidly than average in the Region and less rapidly than average in the Province.
- C) Industries growing less rapidly than average in the Region and more rapidly than average in the Province.
- D) Industries growing less rapidly than average in both the Region and the Province.

Transportation equipment, machinery, furniture and fixtures and electrical products industries have been classified as Class A, the fast growth industries in the Region between 1951 and 1964. These industries have enjoyed significant economies by locating in the Region. This most desirable class in 1964 comprised 28.4 per cent of all manufacturing employment in the Region. The transportation equipment and machinery industries were the most important in this class, and both have been among Ontario's growth industries in the period 1961 to 1966.

The chief occupant of class B was the primary metals industry, with 23.4 per cent of all manufacturing employment. The rapid

growth of this industry in Niagara and its less than average growth in Ontario suggest that the Region is offering the industry considerable locational advantages.

On the unfavourable side, some very large industries - metal fabricating, non-metallic minerals and textiles - fall into Class C. These industries show above average growth in Ontario but are performing badly in the Niagara Region. They comprise 22.4 per cent of employment. Thus, in those industries upon which the Region has traditionally depended, a net shift out of the Region has been occurring.

Finally, slow growth industries in both the Region and the Province (class D) comprise nearly a quarter of the total employment. Food and beverages, paper and allied industries and chemicals fall into this category.

It is, therefore, apparent that not only does the Niagara Region have almost half its employment in those industry groups which are growing slowly in the Region, but four of the Region's basic industries fall into the slow growth categories. Only one of the Region's basic industries, machinery, is a fast growth industry in both the Region and the Province.

Evaluation of the Economic Base and Implications for Economic Development

The three most important aspects of the economy of the

Niagara Region are agriculture, manufacturing and tertiary activities. The first two have been discussed as generators of regional income, while the third is essentially dependent upon the levels of performance of the first two.

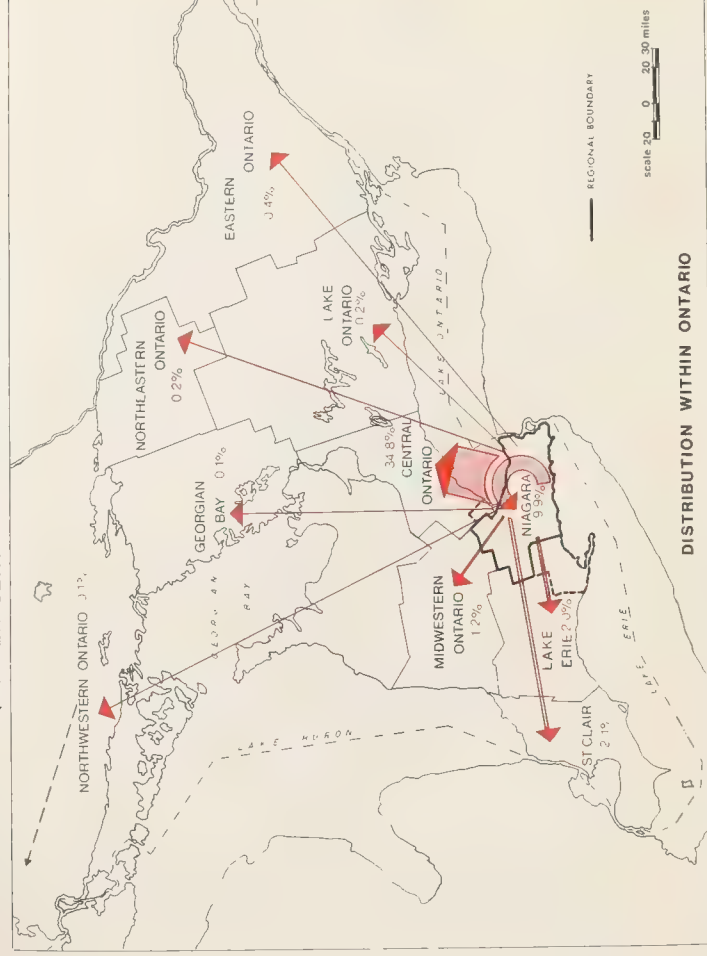
✦ In agriculture, the fruit and tobacco producers are facing problems created by the combination of urban sprawl and market pressures. The major problems in these specialized areas are (i) to select those areas where continued production is economically feasible, in spite of conflicts of land use; (ii) to phase marginal areas out of production; (iii) to provide suitable employment alternatives to displaced workers.

The quality of the soils, the suitability of the climate and the accessibility to major urban centres of Southern Ontario enhance the potential for both specialized and mixed farming in the Niagara Region.

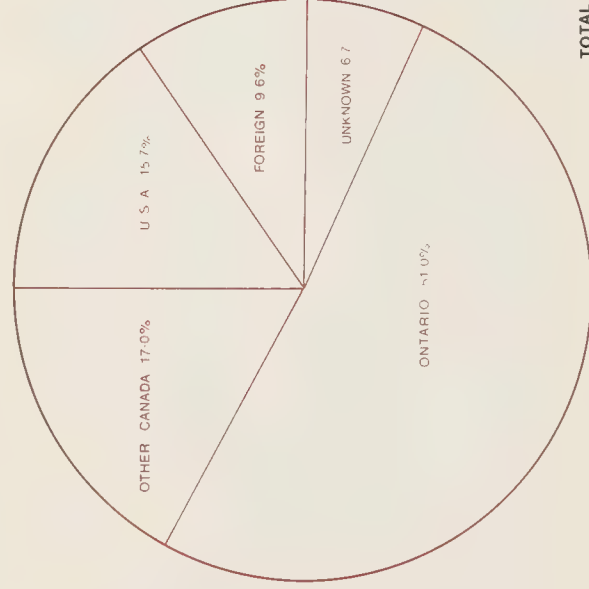
The mining of structural materials and of fuels in the Niagara Region has created problems of (a) controlling the locations and extent of quarries so that the aesthetic quality of the environment is not destroyed and (b) providing alternative means of employment for workers in the fuel industries when the reserves are depleted.

While forestry is becoming progressively less important, the preservation of wooded areas is becoming increasingly more

NIAGARA (SOUTH ONTARIO) DEVELOPMENT REGION
SPATIAL FLOWS OF MANUFACTURING OUTPUT
(BY PER CENT OF TOTAL VALUE 1968)



DISTRIBUTION WITHIN ONTARIO



TOTAL DISTRIBUTION

important in this Region where the pressure of urbanization is so great.

Similarly in the fishing industry, conservation of resources is of vital concern especially as the Region is a major recreational and sport fishing area in Ontario.

Manufacturing, at present, is concentrated in the more urbanized counties of the north and northeast. The regional problem of attracting and stimulating growth in the counties of the southwest may be alleviated by the proposed industrial developments along the Lake Erie shore. A more serious difficulty will be that of inducing growth in other parts of the Niagara Region since approximately half of its employment now lies in the slow growth industries.

Manufacturers fear that there may be a shortage of skilled tradesmen. It is yet too early to feel the effects of community colleges in the Region, but these should improve the general quality of the labour force.

The Niagara Region enjoys the advantage of a good location in relation to existing and potential urban markets. This factor, combined with a deliberate stimulus to the growth of the manufacturing sector, augurs well for the future of the Region.

CHAPTER V
THE TRANSPORTATION SYSTEM

General Characteristics

The capacity of a region's transportation system, even in a mature economy such as that of the Niagara Region, is an important determinant of its future development prospects. If the existing system has the excess capacity necessary to meet an increased movement of persons and goods in the future, a region is in an advantageous position, providing that the excess is located at the right place at the right time. If, however, future traffic volumes result in congestion of the existing transport arteries because future demand has not been anticipated and improvements made, the regional economy will be at a disadvantage. One task, therefore, of regional development planning is to assess a region's transportation system, in terms of its existing and possible future development patterns, isolating both the existing and anticipated problems and recommending alternative solutions. The major road and rail linkages in the Niagara Region are concentrated along its northern Lake Ontario shoreline, connecting the population centres of both Southern Ontario and Northern Michigan with those of the Northeastern Seaboard. This corridor, the spine of which is the Queen Elizabeth Way, contains a significant proportion of the Region's population and most of its high-yield economic activity.

TRANSPORTATION FACILITIES AND NETWORKS



This east-west transportation corridor is intersected by a north-south axis based upon the Welland Canal. The canal functions as a vital link in an international waterway system connecting the ports of the Great Lakes with those of the rest of the world. Besides serving international traffic, the Canal has been an important generator of economic activity in Southern Ontario, and more specifically has been the reason for the location of a number of important industries along its banks and in the Hamilton area, including the steel and pulp and paper industries.

Land Transportation

Figure 12 shows the major highways and railways in the Niagara Region. These networks are particularly well developed in an arc stretching from Brantford in the west, through Hamilton, St. Catharines, Niagara Falls and Welland to Fort Erie and Port Colborne in the southeast.

Figure 13 shows the density of surface transportation routes, indicating the degree of "local accessibility" (i.e. the ease with which one may travel within an area) and the fact that some areas are more accessible than others. In general, the areas of good local accessibility coincide with the arc mentioned above, with accessibility being best in the immediate environs of Burlington and Hamilton. Accessibility is poorest in Norfolk and Haldimand, reflecting and

resulting in the lower population densities of these counties.

Road There is considerable variation in both the seasonal and daily flow of road traffic within the Niagara Region, particularly in the eastern portion. This is largely accounted for by an increase in the volume of recreational traffic in summer, particularly at week-ends. On the Queen Elizabeth Way, north of Fort Erie, approximately 80 per cent of the summer daily traffic in 1962 was recreational in character and even east of Beamsville it accounted for 65 per cent of the total volume. This does not necessarily mean that the volume of recreational traffic decreases towards Hamilton, but rather indicates the growth in the relative importance of other trips, particularly journey-to-work.

Highway 3, west of Fort Erie, exhibited a similar seasonal variation in the intensity of traffic flows and during the summer carried a volume of recreational traffic ranging from 60 to 70 per cent of the total volume. A large proportion of this traffic was destined for Crystal Beach and other beaches along Lake Erie.

Figure 14 shows accessibility to Toronto as measured by time/distance. All parts of the Region, with the exception of southwestern Norfolk, are within two hours driving time of Toronto. Hamilton and Burlington are less than an hour's distance. The Branch's Survey of Manufacturing revealed that good accessibility to Toronto is an important consideration for many manufacturers in the Region who

depend upon major urban areas in Ontario as a source of their material inputs and as a destination for their final products.

Rail In general, the importance of railways has declined in recent years because of increasing car ownership and the shift by manufacturers towards the use of trucks for the movement of goods, particularly over shorter distances.

The Region on the whole is well provided with passenger and freight services although a large proportion of the services is designed to meet extra-regional needs. Freight services are utilized by many industries in the Region. The Survey of Manufacturing revealed that such services were fairly satisfactory at present.

Water During 1967, approximately 137 million tons of cargo were transported on the Great Lakes and 38.5 per cent of this total passed through the Welland Canal.

In 1967 over 14 million tons of cargo passed through the six main ports of the Region as compared to just over 12 million tons in 1961, an increase of 16.7 per cent. This increase may be attributed to a rise of 2,357,533 tons in the volume of cargo imported into the Region and it more than offsets a decline of 347,295 tons in the volume of cargo exported.

During the six-year period 1961-1967, ports in the Region have become relatively less dependent upon goods from areas outside

Canada but have increased the proportion and volume of their out-bound cargo to these areas.

Hamilton and Port Colborne are the two most important ports in the Region in terms of tonnage of cargo, accounting for 91 per cent of all the cargo handled at the Region's ports in 1967 as compared to 91.6 per cent in 1961. During this period, however, Hamilton increased its share of the total tonnage from 64.7 to 75.4 per cent while Port Colborne's proportion declined from 24.6 to 16.2 per cent.

While the other four ports (Welland, St. Catharines, Thorold and Port Maitland) account for only 8.4 per cent of the total cargo handled in the Region, they nevertheless contribute significantly to the regional economy, in particular to the manufacturing sector. The major industries that benefit from the canal are: paper and allied products plants, flour mills, iron and steel mills, fabricated metal plants, ship building and repair establishments and fertilizer producers.

Transportation in the Future The Niagara Region's future transportation system cannot be planned in isolation from the developments in the Great Lakes area generally, and Southern Ontario more specifically. Rather the future transportation system must be planned within an integrated provincial framework where the Region's interests are carefully balanced against those of the wider community.

A positive transportation policy should be designed, not

only to relieve existing areas of congestion, but also to stimulate and structure development in other parts of the Region. Many of the Niagara Region's transportation problems are under serious consideration by various government departments.

CHAPTER VI

PHYSICAL LAND CAPABILITY

The physical capability of an area of land is its potential for various types of resource development; its suitability for resource development is determined in relationship to the ability of the environment to sustain itself at a desired level of quality. Figure 15 illustrates the land capability of the Niagara Region. When the map of present land use in Chapter II (Figure 3) is compared with the land capability analysis map on the following page, the relationship between the actual and the potential uses of the Region's natural resources can be clearly seen. The land capability analysis map does not show what the future land use pattern of the Niagara Region will be, but rather what the different types of land in the Region are best suited for in terms of their physical characteristics.

The Region exhibits a relatively high physical capability for various types of resource development. It is well-endowed for agricultural production. It contains two vital areas of agricultural specialization: the fruit belt and the tobacco growing areas of Norfolk County. There are a number of areas with a high capability for intensive outdoor recreational use. A potential regional open space system for recreation and conservation exists based primarily on major river valleys, shorelines, escarpments, and large zones of low capacity for intensive recreational use. Significant areas of existing woodland and environmental hazards can be included as part of the open

NIAGARA (SOUTH ONTARIO) DEVELOPMENT REGION LAND CAPABILITY ANALYSIS

REGIONAL DEVELOPMENT BRANCH, DEPARTMENT OF TREASURY AND ECONOMICS
 Source: Canada Land Inventory

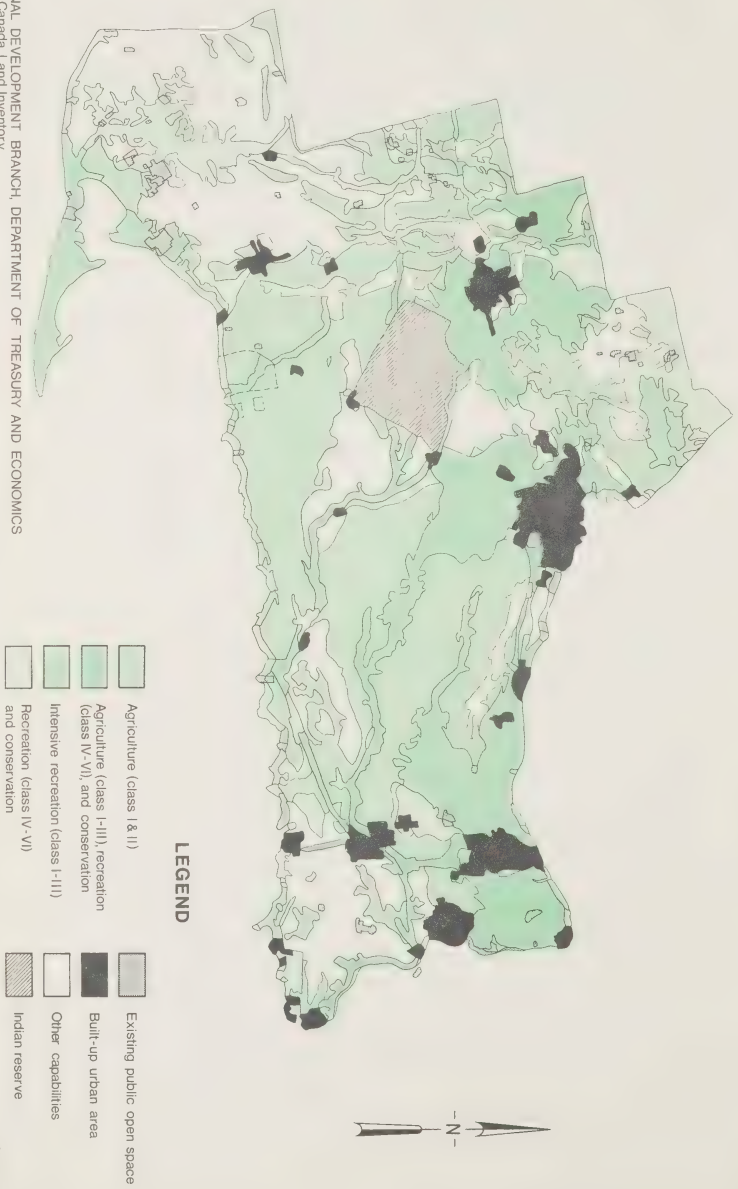


Figure 15

LAND CAPABILITY FACTORS, TOWNSHIP AGGREGATES AND PERCENTAGES, NIAGARA REGION, 1970

| | AGRICULTURE CAPABILITY ² | | | | RECREATION CAPABILITY | | | | AGRICULTURE AND RECREATION CAPABILITY | | | | EXISTING AGRICULTURAL LANDS | |
|------------------------|-------------------------------------|-----|-----------------------|-----|------------------------|-----|------------|-----|---------------------------------------|------|--------------------|------|-----------------------------|------|
| | Agriculture ¹ | | Class II ⁴ | | Class III ⁵ | | Recreation | | Agriculture - I-III | | Recreation - IV-VI | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| BRANT | 57,290 | 25 | 79,625 | 35 | 61,010 | 18 | - | - | - | - | 28,290 | 12 | 93,487 | 18 |
| Brantford | 21,815 | 28 | 25,920 | 33 | 15,825 | 23 | - | - | - | - | 40,976 | 50 | 11,032 | 42 |
| Burford | 8,295 | 13 | 34,635 | 53 | 2,700 | 04 | - | - | - | - | 8,566 | 13 | 5,917 | 09 |
| Dumfries, South | 13,790 | 28 | 12,860 | 26 | 13,065 | 26 | - | - | - | - | 33,704 | 68 | 10,904 | 22 |
| Oakland | 2,070 | 18 | 4,355 | 38 | 1,870 | 16 | - | - | - | - | 464 | 04 | 3,251 | 28 |
| Oranoga | 11,320 | 49 | 1,865 | 08 | 7,550 | 33 | - | - | - | - | 12,309 | 53 | 959 | 04 |
| HALDIMAND | 40,805 | 13 | 206,065 | 66 | 33,175 | 11 | 5,086 | 01 | 3,419 | 01 | 38,544 | 18 | 50,625 | 36 |
| Cambridge | - | - | 19,970 | 91 | - | - | - | - | - | - | 2,202 | 10 | 8,368 | 38 |
| Cuyaga, North | 7,985 | 24 | 14,385 | 45 | 7,030 | 23 | - | - | - | - | 4,586 | 14 | 9,500 | 29 |
| Cuyaga, South | 460 | 03 | 14,335 | 86 | 565 | 03 | - | - | - | - | 2,163 | 13 | 5,325 | 32 |
| Georgetown | 770 | 04 | 13,055 | 55 | 1,020 | 06 | 1,392 | 08 | 1,044 | 06 | 2,939 | 17 | 7,785 | 16 |
| Millton and Sherbrooke | 17,665 | 39 | 8,960 | 20 | 15,360 | 34 | 2,150 | 06 | 1,433 | 10 | 9,969 | 22 | 12,738 | 27 |
| Oneida | - | - | 8,960 | 20 | 15,360 | 34 | - | - | - | - | 9,969 | 22 | 12,738 | 27 |
| Rainham | - | - | 26,365 | 96 | 67,235 | 12 | 822 | 03 | - | - | 3,834 | 14 | 1,917 | 07 |
| Seneca | 7,985 | 18 | 29,180 | 67 | 5,325 | 12 | - | - | - | - | 16,633 | 38 | 4,377 | 10 |
| Walpole | 5,940 | 08 | 60,420 | 84 | 3,020 | 04 | 722 | 01 | 722 | 01 | 10,108 | 14 | 3,610 | 05 |
| LINCOLN | 18,820 | 10 | 119,880 | 66 | 25,890 | 14 | 3,326 | 02 | 1,413 | 01 | 77,269 | 51 | 39,107 | 16 |
| Cataraugus | 280 | 01 | 33,660 | 97 | 9,120 | 33 | - | - | - | - | 7,283 | 21 | 10,057 | 29 |
| Clinton | 5,845 | 23 | 9,435 | 34 | - | - | - | - | - | - | 16,616 | 62 | 3,216 | 12 |
| Gettysburg | 2,830 | 07 | 35,680 | 88 | 1,210 | 03 | - | - | - | - | 10,994 | 11 | 4,479 | 11 |
| Grimsby, North | 3,675 | 19 | 5,760 | 31 | 3,565 | 19 | 566 | 03 | - | - | 3,398 | 18 | 2,463 | 15 |
| Grimsby, South | 505 | 03 | 17,660 | 87 | 215 | 01 | - | - | - | - | 4,040 | 20 | 1,217 | 06 |
| Grimsby, West | 4,610 | 18 | 17,660 | 87 | 427 | 02 | 302 | 01 | 302 | 01 | 1,000 | 07 | 7,962 | 26 |
| Grimsby, East | 4,610 | 18 | 17,660 | 87 | 427 | 02 | 302 | 01 | 302 | 01 | 1,000 | 07 | 7,962 | 26 |
| Niagara | 1,600 | 06 | 10,320 | 40 | 6,800 | 26 | 2,338 | 09 | 779 | 03 | 18,766 | 77 | 2,276 | 10 |
| WELLAND | 17,970 | 08 | 73,185 | 33 | 93,640 | 42 | 8,083 | 04 | 22,917 | 04 | 5,174 | 08 | 10,452 | 14 |
| Berrie | - | - | 8,700 | 22 | 25,085 | 63 | 1,984 | 05 | 3,174 | 08 | 5,157 | 13 | 4,364 | 11 |
| Woodland | - | - | 5,630 | 27 | 14,830 | 71 | - | - | - | - | 420 | 02 | 1,889 | 09 |
| Woodstone | - | - | 5,630 | 27 | 14,830 | 71 | - | - | - | - | 420 | 02 | 1,889 | 09 |
| Palham | 4,605 | 15 | 17,660 | 58 | 4,100 | 14 | 2,283 | 07 | 2,283 | 07 | 6,888 | 29 | 1,659 | 11 |
| Thorold | 770 | 03 | 19,070 | 70 | 4,090 | 15 | - | - | - | - | 11,385 | 38 | 6,859 | 14 |
| Winfield | 12,595 | 23 | 16,125 | 30 | 8,140 | 15 | 3,816 | 07 | 5,452 | 10 | 7,633 | 14 | 9,268 | 17 |
| Willoughby | - | - | 3,840 | 19 | 15,360 | 76 | - | - | - | - | 607 | 03 | 1,618 | 08 |
| WENTWORTH | 71,780 | 26 | 60,820 | 22 | 65,780 | 34 | 1,562 | 01 | 48,059 | 18 | 88,054 | 32 | 63,666 | 21 |
| Ancaster | 17,745 | 37 | 9,720 | 20 | 15,295 | 23 | - | - | - | - | 9,173 | 19 | 3,796 | 14 |
| Beverly | 14,250 | 20 | 12,360 | 17 | 16,710 | 23 | - | - | - | - | 26,536 | 37 | 13,832 | 19 |
| Binbrook | 13,295 | 48 | 6,860 | 25 | 5,505 | 20 | - | - | - | - | 16,632 | 60 | 3,881 | 14 |
| Flamborough, East | 4,415 | 13 | 11,800 | 34 | 4,585 | 13 | 7,024 | 24 | 4,214 | 12 | 14,750 | 42 | 15,730 | 42 |
| Flamborough, West | 7,530 | 22 | 8,000 | 23 | 6,070 | 18 | 344 | 01 | 3,100 | 09 | 11,021 | 32 | 7,577 | 22 |
| Flamborough, North | 5,545 | 13 | 11,800 | 34 | 1,600 | 04 | - | - | - | - | 21,804 | 71 | 7,719 | 03 |
| Salisbury | 5,545 | 18 | 9,060 | 30 | 7,095 | 23 | 1,218 | 06 | 1,826 | 06 | 3,653 | 12 | 3,044 | 10 |
| NORFOLK | 16,275 | 04 | 124,920 | 31 | 10,865 | 03 | 55,450 | 14 | 31,232 | 08 | 18,550 | 05 | 151,889 | 35 |
| Charlottetown | 2,300 | 04 | 8,705 | 14 | 1,540 | 02 | 14,603 | 23 | 8,254 | 13 | 2,540 | 04 | 41,289 | 65 |
| Wroughton | 1,531 | 07 | 3,070 | 09 | - | - | 687 | 02 | 3,433 | 03 | 1,030 | 03 | 17,506 | 51 |
| Wroughton, North | 4,300 | 07 | 49,685 | 71 | 2,870 | 02 | - | - | - | - | 2,892 | 06 | 11,665 | 26 |
| Wroughton, South | 4,300 | 07 | 49,685 | 71 | 2,870 | 02 | - | - | - | - | 2,892 | 06 | 11,665 | 26 |
| Walsingham, North | 2,765 | 07 | 1,845 | 04 | - | - | 9,103 | 14 | - | - | 9,103 | 14 | 18,896 | 45 |
| Walsingham, South | - | - | 15,360 | 28 | - | - | 40,160 | 74 | - | - | 2,714 | 05 | 14,653 | 27 |
| Winham | 4,145 | 06 | 13,825 | 21 | 2,765 | 04 | - | - | - | - | 662 | 01 | 25,830 | 39 |
| Woodhouse | 1,230 | 03 | 28,415 | 80 | 820 | 02 | - | - | - | - | 4,980 | 14 | 4,268 | 12 |

¹Size of Townships taken from Canada Land Inventory, AQUA information. Townships covered mainly by urban development and Indian reserves excluded.

²This category includes the land listed under Agriculture and Recreation Capability. Figures for Agriculture Capability are taken from Canada Land Inventory, AQUA information.

³According to the Canada Land Inventory Class I soils have no significant limitations in use for crops. They are deep, have good water-holding capacity and in the virgin state were moderately high in productivity for a wide range of field crops.

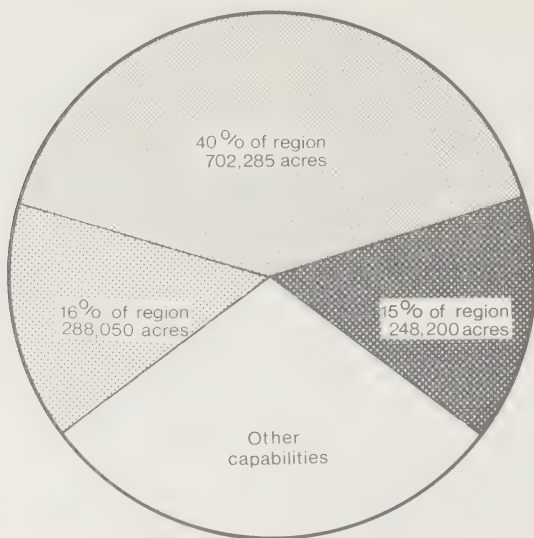
⁴Class II soils have moderate limitations that restrict the range of crops. They may require more intensive conservation measures, tillage practices and special soil-conserving systems than Class I soils.

⁵Class III soils have moderately severe limitations restricting the range of crops, the timing and ease of tillage, planting and harvesting and they need special methods of soil conservation.




⁶According to the Canada Land Inventory, Class I-III recreation lands have a very high to moderately high capability for outdoor recreation, that is, they have a natural capability to engender and sustain a very high to moderately high total annual use, based usually on intensive or moderately intensive activities.

⁷Class IV lands have moderate to low capability for outdoor recreation. They have a natural capability to engender and sustain low total use based on dispersed activities.

NIAGARA (SOUTH ONTARIO) DEVELOPMENT REGION PROPORTION OF AGRICULTURAL LAND BY CAPABILITY CLASS REGIONAL & PROVINCIAL



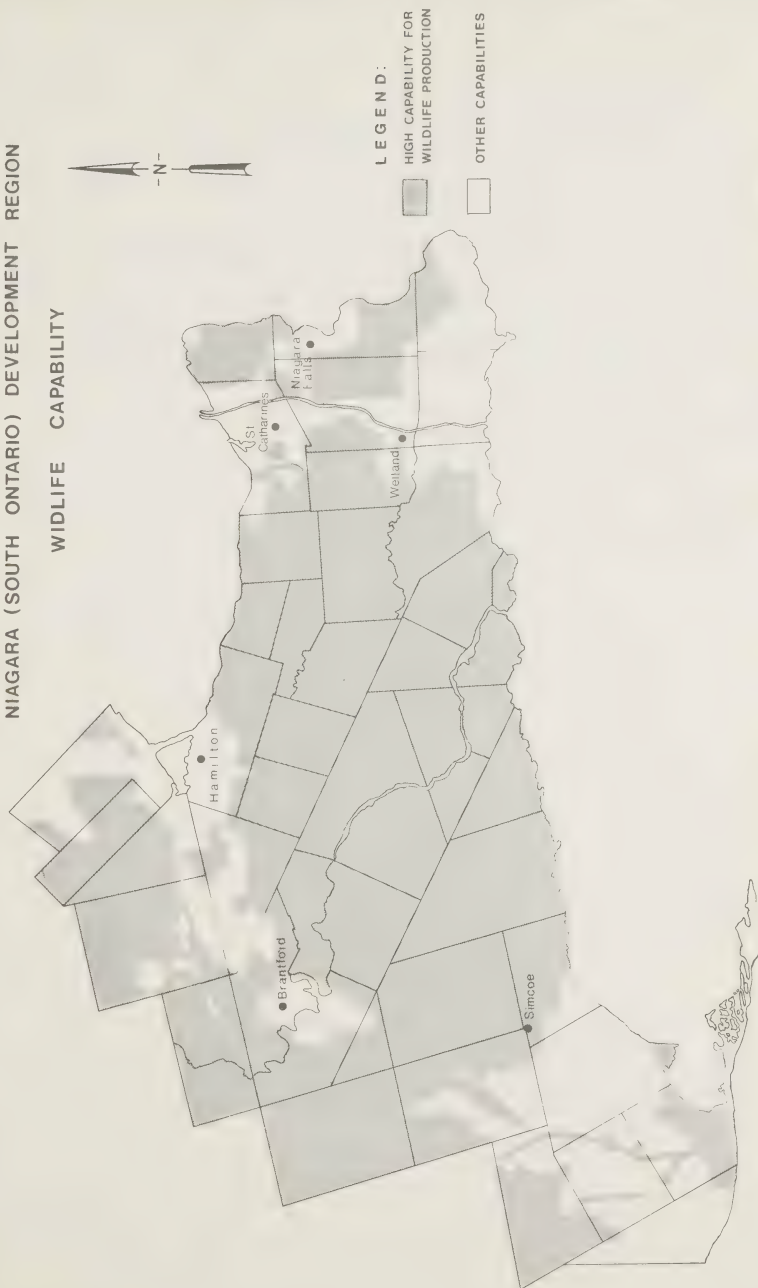
CRITERIA OF AGRICULTURAL LAND CAPABILITY

| AGRICULTURE CAPABILITY CLASS | % OF PROVINCIAL TOTAL | |
|--|--------------------------|---|
|  CLASS I LAND | 6% | Soils in this class have no significant limitations in use for crops |
|  CLASS II LAND | 15% | Soils in this class have moderate limitations that restrict the range of crops or require moderate conservation practices |
|  CLASS III LAND | 8% | Soils in this class have moderately severe limitations that restrict the range of crops or require special conservation practices |

NOTE - CLI Agriculture Classes range from I through VII

NIAGARA (SOUTH ONTARIO) DEVELOPMENT REGION

WILDLIFE CAPABILITY



REGIONAL DEVELOPMENT BRANCH, DEPARTMENT OF TREASURY AND ECONOMICS
Source, Ontario Land Inventory, Dept. of Lands and Forests.

space system. The Region also shows a high level of capability for a wide range of wildlife species.

These factors represent the important physical and resource attributes of the Niagara Region which should be taken into account in future development.

CHAPTER VII

POTENTIAL CENTRES OF OPPORTUNITY

The Growth Centre Concept

Because southwestern Ontario is rapidly becoming urbanized, it is expected that a substantial number of problems and their solutions will lie within urban areas. A growth centre is an urban centre capable of either spontaneous growth, both of population, economic activity and income level together, or of potential growth. A very important feature of a growth centre, or centre of opportunity, is that the benefits of its growth are likely to be felt in the area surrounding it. The advantages which development of growth centres provide include maximum utilization of investment, improvement in the range of services available to people and industry, exploitation of external economies, diversification of economic activity, and a greater capacity to withstand the effects of future structural changes and cyclical downswings. The continuing interaction of these factors is likely to provide better job opportunities for labour, and a large and diverse labour market for industry.

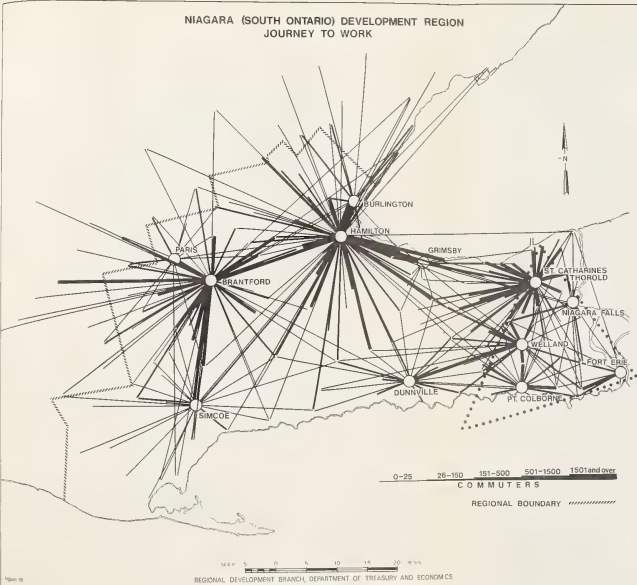
Criteria for Selection of Centres of Opportunity Five major considerations are essential in an examination of possible centres of opportunity in the Niagara Region. The first involves the population of each centre and its associated urban area. A second is the past rate of growth, particularly of the centre but also of the adjacent area. A third is the present inter-industry mix within the centre, and the

anticipated future trends in this mix. The fourth is concerned with the infrastructure required for this potential growth - sewage facilities, water supply, energy supply, transportation access, and educational facilities. The fifth involves transportation and communication linkages among centres of opportunity.

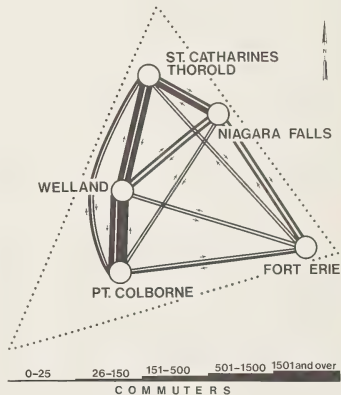
Potential centres of opportunity need to be chosen with careful regard to (1) the functions they will be expected to carry out in their respective performance areas and (2) the provincial policy of "nodalized decentralization". Areas of high performance obviously do not need measures to stimulate growth. There, major development problems are associated with space adjustment and conservation of both human and natural resources.

It is generally recognized that journey-to-work is one of the most important criteria for defining the sphere of influence of an urban centre. The journey-to-work pattern shows the day-to-day influence exerted by a centre of employment upon a surrounding area. Figure 18 shows the journey-to-work pattern for the major centres in the Region. It may be observed that the centres' spheres of influence are not mutually exclusive, but rather overlap one another. The amount of overlap is dependent on the range of employment opportunities offered in each centre, the spacing of the centres and the degree of accessibility which the transportation system provides. In general, however, the larger the city the wider its range of influence.

NIAGARA (SOUTH ONTARIO) DEVELOPMENT REGION JOURNEY TO WORK



INTER-URBAN JOURNEY TO WORK ST. CATHARINES-PT. COLBORNE- NIAGARA FALLS TRIANGLE



The possible centres of opportunity in the Niagara Region are listed on Table 7.1. These are the 29 incorporated urban centres in the Region that have populations of over 1,000 people. Selected criteria for evaluating their past and present performance are also listed. With the exception of the classification into functional types, each centre is assigned to one of five classes (with class 1 representing the highest, and class 5 the lowest performance) for each of the criteria listed. For example, Brantford's accessibility is excellent (class 1), while Port Rowan's is poor (class 5). Thus it is possible to compare the growth potential of one urban centre with another according to any or all of the selected measures listed. It should be noted that the classification system on the table is derived from the performance of incorporated urban centres in Ontario, and the deviation of this performance from the provincial norm. The classification systems can therefore be applied to the urban centres in any region in the Province.

Table 7.1 shows that centres with the greatest growth prospects are Burlington, Hamilton, St. Catharines, and Simcoe. The second level of centres in the Niagara Region in terms of growth potential are Brantford, Niagara Falls, Port Dover and Stoney Creek. Centres in which growth potential is not encouraging are Crystal Beach, Delhi, Port Rowan and Waterford.

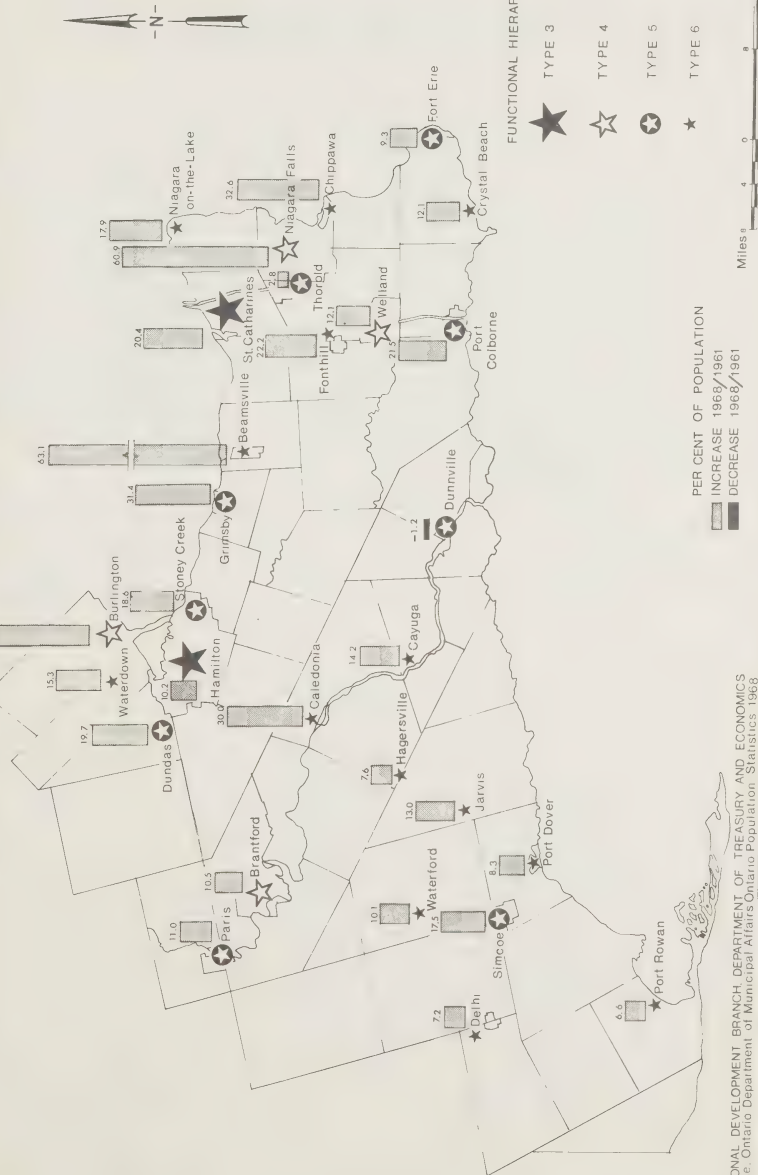
TABLE 7.1

SELECTED MEASURES OF URBAN GROWTH POTENTIAL, NIAGARA REGION, 1970

| SELECTED MEASURES | URBAN CENTRES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------|-----------|------------|-----------|--------|----------|---------------|-------|--------|-----------|----------|-----------|---------|-------------|----------|--------|---------------|---------------------|-------|---------------|------------|------------|----------------|--------|--------------|---------|-----------|-----------|---------|--|--|--|
| | Beamsville | Brantford | Burlington | Caledonia | Cayuga | Chippawa | Crystal Beach | Delhi | Dundas | Dunnville | Fonthill | Fort Erie | Grimsby | Hagersville | Hamilton | Jarvis | Niagara Falls | Niagara-on-the-Lake | Paris | Port Colborne | Port Dover | Port Rowan | St. Catharines | Simcoe | Stoney Creek | Thorold | Waterdown | Waterford | Welland | | | |
| Functional Type of Centre | 6 | 4 | 4 | 6 | 6 | 6 | 6 | 5 | 5 | 6 | 5 | 5 | 6 | 3 | 6 | 4 | 6 | 5 | 5 | 6 | 6 | 3 | 5 | 5 | 5 | 6 | 6 | 4 | | | | |
| Trade Area Size | 4 | 1 | 1 | 3 | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 3 | 1 | 4 | 3 | 5 | 3 | 2 | 4 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 2 | | | | |
| Trade Area Population 1966 | 4 | 2 | 1 | 4 | 5 | 3 | 4 | 5 | 1 | 5 | 2 | 2 | 5 | 4 | 1 | 4 | 1 | 3 | 3 | 1 | 4 | 5 | 1 | 3 | 1 | 1 | 4 | 1 | | | | |
| Wholesale Sales, 1961 | - | 3 | 3 | - | - | - | - | - | 4 | 4 | - | 4 | 4 | - | 1 | - | 3 | - | 4 | 4 | - | 3 | 3 | 4 | 4 | - | - | 4 | | | | |
| Manufacturing Employment 1964 | 4 | 1 | 3 | 5 | - | - | - | 4 | 3 | 3 | - | 4 | 4 | - | 1 | - | 2 | 4 | 4 | 3 | 4 | - | 1 | 3 | 4 | 3 | 5 | 4 | 2 | | | |
| Provincial and Federal Government Services | 5 | 2 | 3 | 5 | 3 | 5 | 5 | 5 | 4 | 5 | 3 | 5 | 5 | 1 | 5 | 3 | 5 | 5 | 3 | 5 | 1 | 2 | 5 | 5 | 5 | 5 | 3 | | | | | |
| Population Growth of Centre, % Change 1961 to 1968 | 1 | 3 | 1 | 1 | 3 | 1 | 3 | 3 | 2 | 4 | 2 | 3 | 1 | 3 | 3 | 3 | 1 | 2 | 3 | 2 | 3 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | | | | |
| Retail Sales % Change 1961 to 1966 | 3 | 3 | 3 | 1 | - | 1 | 4 | 4 | 4 | 3 | 3 | 3 | 2 | 3 | 3 | - | 2 | 4 | 4 | 4 | 5 | - | 2 | 4 | 5 | 4 | 1 | 3 | 3 | | | |
| Manufacturing Employment % Change 1961 to 1964 | 3 | 3 | 3 | - | - | - | - | - | 3 | 3 | - | 4 | 3 | - | 3 | - | 2 | 2 | 4 | - | 3 | - | 3 | 3 | 1 | 1 | 3 | 3 | | | | |
| Growth Prospects of the Economic Base | 4 | 2 | 1 | 3 | 3 | 3 | 5 | 5 | 4 | 4 | 3 | 2 | 4 | 3 | 1 | 3 | 2 | 4 | 4 | 3 | 2 | 5 | 1 | 1 | 2 | 3 | 5 | 3 | | | | |
| Accessibility of Centre | 4 | 1 | 1 | 3 | 3 | 4 | 4 | 3 | 1 | 4 | 2 | 4 | 3 | 2 | 1 | 3 | 2 | 5 | 1 | 2 | 4 | 5 | 2 | 2 | 1 | 1 | 4 | 1 | | | | |
| Cultural and Recreational Facilities | 5 | 2 | 3 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 3 | 3 | 3 | 3 | 2 | 5 | 2 | 4 | 4 | 5 | 4 | 2 | 4 | 4 | 5 | 5 | 4 | | | | |
| Water and Sewer Spare Capacity | 4 | 3 | 1 | 3 | 5 | 3 | 3 | 3 | 3 | 5 | 5 | 3 | 3 | 5 | 3 | 3 | 4 | 3 | 4 | 3 | 2 | 5 | 2 | 4 | 4 | 2 | 4 | 5 | 3 | | | |
| Availability of Industrial Sites | 4 | 1 | 1 | 3 | 4 | 2 | 5 | 1 | 4 | 4 | 4 | 3 | 3 | 3 | 2 | 1 | 4 | 1 | 4 | 1 | 4 | 1 | 3 | 5 | 3 | 3 | 4 | 1 | | | | |
| Summary of Evaluation Criteria for Centres of Opportunity | 4 | 2 | 1 | 3 | 3 | 3 | 5 | 5 | 4 | 5 | 4 | 3 | 4 | 4 | 1 | 3 | 2 | 4 | 4 | 2 | 3 | 5 | 1 | 2 | 3 | 3 | 3 | 5 | 3 | | | |

Note: Dashes refer to centre where data are not available or applicable.

NIAGARA (SOUTH ONTARIO) DEVELOPMENT REGION RATE OF POPULATION INCREASE AND FUNCTIONAL HIERARCHY OF CENTRES



REGIONAL DEVELOPMENT BRANCH, DEPARTMENT OF TREASURY AND ECONOMICS
Source: Ontario Department of Municipal Affairs Ontario Population Statistics 1968

NIAGARA (SOUTH ONTARIO) DEVELOPMENT REGION LOCATION OF GOVERNMENT SERVICES



LEGEND

- ① Rating of Centres Based on Number and Importance of Services Provided
 [A][B][C][D] PROVINCIAL GOVERNMENT SERVICES
 [E][F][G] Federal Government Services

GOVERNMENT SERVICES

MAP CODES

PROVINCIAL

- | | |
|--------------------------------------|---------------------------------|
| A AGRICULTURE & FOOD | K LABOUR |
| B HEALTH | L LANDS & FORESTS |
| C CORRECTIONAL SERVICES | M MUNICIPAL AFFAIRS |
| D TRADE & DEVELOPMENT | N MINES |
| E EDUCATION | O TREASURY & ECONOMICS |
| F FINANCIAL & COMMERCIAL AFFAIRS | P PUBLIC WORKS |
| G PROVINCIAL SECRETARY & CITIZENSHIP | Q REVENUE |
| H HIGHWAYS | R ENERGY & RESOURCES MANAGEMENT |
| I TOURISM & INFORMATION | S SOCIAL & FAMILY SERVICES |
| J JUSTICE & ATTORNEY - GENERAL | T TRANSPORT |
| | U UNIVERSITY AFFAIRS |

FEDERAL

- | | |
|--|--|
| a AGRICULTURE | n POSTMASTER-GENERAL & COMMUNICATIONS |
| b NATIONAL HEALTH & WELFARE | o TREASURY |
| c EXTERNAL AFFAIRS | p PUBLIC WORKS |
| d TRADE & COMMERCE | q REVENUE |
| e REGISTRAR - GENERAL | r ENERGY, MINES & RESOURCES |
| f FINANCE | s NATIONAL DEFENSE (DEFENSE PRODUCTION) |
| g SECRETARY OF STATE | t TRANSPORT |
| h FORESTRY (REGIONAL ECONOMIC EXPANSION) | u UNEMPLOYMENT INSURANCE COMMISSION |
| INDUSTRY | v VETERANS' AFFAIRS |
| i JUSTICE & SOLICITOR - GENERAL | w CONSUMER & CORPORATE AFFAIRS |
| k LABOUR | x CANADIAN BROADCASTING CORPORATION |
| l INDIAN AFFAIRS & NORTHERN DEVELOPMENT | y CENTRAL MORTGAGE & HOUSING CORPORATION |
| m MANPOWER & IMMIGRATION | z FISHERIES |

CHAPTER VIII

GOALS, NEEDS AND PRIORITIES

Introduction

This report began with a discussion of broad provincial goals for attaining the full social, economic and physical development potential of Ontario's ten development regions. Whether these goals are defined in terms of employment opportunities, social services or environmental protection, they all reflect the search for an enhanced quality of "livability" - a concern shared by all regions in the Province, and indeed by all provinces of Canada.

What does differ from region to region is the nature and severity of the local problems which must be overcome if each region is to attain these goals. While the principal purpose of this phase of the regional development program is to identify the problems and needs of the region, a later phase will be concerned with devising strategies and plans for solving these problems and guiding future development.

As noted in the 1966 White Paper, Design for Development, "Much of Ontario's regional development program will be accomplished by a thorough-going coordination of the programs, policies

and spending of government departments....on a regional basis". One of the prerequisites to effective use of the provincial budget as a mechanism for carrying out regional plans is the classification of all provincial program spending according to the types of problems and needs these programs are designed to serve.

Currently, each provincial department is engaged in a coordinated planning program of defining its own overall departmental goals and problem-solving program objectives. Since the problems with which these provincial programs are concerned all reflect the local needs of one or more regions in Ontario, our regional development plans must ultimately reflect the program objectives being defined by individual departments and their budgetary plans for solving these specific problems.

Rather than duplicate these parallel provincial efforts to define program objectives, this report addresses itself to the equally important task of supplying the essential regional ingredient to what is an overall provincial planning program - that is, providing an assessment of priorities among the major needs of each zone and total area of the Niagara Region. To maintain coordination with program planning and permit inter-regional comparison, potential regional needs have been standardized and classified in accordance with seven broad functional

categories being used for provincial program analysis. An eighth functional program category, "Public Safety," is currently being evaluated for county and regional priorities. It will be distributed at a later date for local review.

Perhaps in many instances, the priority judgements must be considered preliminary. Major efforts have been made to incorporate the recommendations of other provincial departments. Since the best knowledge of regional needs can often be determined only by those who enjoy a day-to-day contact with local problems and aspirations, extensive use has been made of the South Ontario Economic Development Council's own five-year program recommendations, the reports of the Niagara Regional Advisory Board and the findings of the Haldimand-Norfolk Study.

One of the most important purposes of this report is to provide these latter three organizations with the opportunity to review their assessment of local priorities, and with the participation of local municipalities and private citizens, to assist the Ontario Government in achieving a full appreciation of those regional conditions to which our plans and provincial budget should be directed.

1. Economic Development Priorities

This goal aims at assisting the Niagara Region to attain its full potential for economic development, consistent with the

TABLE 8.1

ECONOMIC DEVELOPMENT PRIORITIES

| | <u>Wentworth</u> | <u>Lincoln And Welland</u> | <u>Brant</u> | <u>Haldimand</u> | <u>Norfolk</u> | <u>Niagara Region</u> |
|---|-------------------|------------------------------------|-------------------|-------------------|-------------------|---------------------------|
| <u>Needs</u> | <u>Zone 1</u> | <u>Zone 2</u> | <u>Zone 3</u> | <u>Zone 4</u> | <u>Zone 5</u> | |
| Increase per capita income and productivity | M | M | M | H | H | H |
| Reduce out-migration; increase population growth | L | L | M | M | M | L |
| Reduce unemployment, annual and seasonal | M | M | M | M | M | M |
| Increase male employment opportunities | L | M | M | H | H | M |
| Increase female employment opportunities | H | M | M | H | H | M/H |
| Increase or provide employment opportunities for skilled and higher education | M | M | M | H | H | M/H |
| Increase manufacturing employment | M | M | M | H | H | H |
| Increase services and construction employment | M | M | H | H | H | H |
| Increase industry diversification in each sector | H | H | H | H | H | H |
| Increase urban centres for industry and services | L | L | L | H | H | M |

H - High Priority, M - Medium Priority, L - Low Priority.

orderly and rational development of the Province as a whole. In particular, total output per worker in all sectors of the regional economy should be increased. Controlled population growth should be encouraged through reducing out-migration or increasing in-migration where deemed necessary. Also very important is the provision of a wide range of employment opportunities for all members of the labour force, particularly in the secondary and tertiary sectors of the regional economy. Finally, economic efficiency should be improved by increasing the number of urban centres of a size which permits self-sustained growth in manufacturing and services employment.

Problem Identification The Niagara Region has traditionally owed its prosperity to both its specialized agriculture and its locational advantages for certain types of manufacturing. Both the specialized fruit growing areas and the tobacco growing areas are facing problems, the former from pressures of urbanization, and the latter from the ^{uncertainties} ~~general problems~~ of the tobacco industry as a whole. In the manufacturing sector, the Niagara Region has not kept pace with Ontario in adding new jobs as old industries have stabilized or declined. Over half of the total employment in manufacturing is concentrated in slow growth industries.

Seasonality of employment is a particular problem in

the counties of Norfolk, Haldimand and Brant, where there are concentrations of employment in agriculturally based industries. Seasonality is also a problem in Lincoln because of the automotive industries. Employment opportunities are limited for both men and women in Norfolk and Haldimand counties. Female employment opportunities are also limited in Wentworth County because of the predominance of heavy industry in Hamilton. ^{At the time of the shortage} There ^{was} is a shortage of skilled tradesmen throughout the Niagara Region, ~~and~~ With the excellent unemployment benefits provided by many companies, the mobility of highly skilled workers is very limited. Finally, the relatively limited job opportunities for university graduates seems to be resulting in an out-migration of such persons from the Region.

Sub-regions within the Niagara Region that have concentrations of slow growth industries and thus an unfavourable industry mix for long-term growth, are Brant, Lincoln and Welland counties. In addition, competition from the high-wage unionized industries is causing severe economic stress to many of the smaller manufacturers in the Region.

Technology Technological developments in many of the industries in the Region will probably result in a reduced demand for unskilled labour. Few of the industries interviewed during the Regional Development Branch's Survey of Manufacturing,

however, indicated any serious reduction in the numbers of workers employed in the immediate future. Many industries indicated, however, that they were in the process of or planning to install more sophisticated equipment, in particular the application of computerization to the production line.

2. Transportation and Communication Priorities

This goal aims at providing increased accessibility for urban and rural communities in the economical movement of persons and goods. More specifically, it is concerned with improving accessibility between the various centres of population on the one hand and between urban centres and natural resources, recreation areas, airports, etc. on the other, through the provision of better communication facilities. A further aim is to provide comprehensive transportation and communication planning so that the most effective combination of modes can be designed to meet regional needs.

Problem Identification While the road system in the Niagara Region is well developed, some routes are inadequate to carry existing traffic and have insufficient capacity to meet anticipated future needs. Improving the road system between centres should have high priority at the regional level, and particularly in the counties of Lincoln, Welland, Norfolk and Haldimand. Tentative solutions to these problems have been proposed in various regional transportation planning studies.

TABLE 8.2

TRANSPORTATION AND COMMUNICATION PRIORITIES

| Needs | Wentworth | | Lincoln And Welland | | Brant | Haldimand | Norfolk | Niagara |
|--|-----------|-----------|---------------------------|-----------|-----------|-----------|---------|---------|
| | Zone 1 | Zone 2 | Zone 2 | Zone 3 | Zone 4 | Zone 5 | Zone | Region |
| Road improvements for rural areas, smaller centres | L | L | L | L | H | H | H | M |
| Road improvements between larger urban centres | M | H | H | M | H | H | H | H |
| Airport facilities and services improvement | ? | ? | ? | ? | ? | ? | ? | ? |
| Access to and from airports | ? | ? | ? | ? | ? | ? | ? | ? |
| Passenger rail services maintenance | ? | ? | ? | ? | ? | ? | ? | ? |
| Rail cargo services maintenance | L | L | L | L | H | H | H | M |
| Air freight services development | ? | ? | ? | ? | ? | ? | ? | ? |
| Truck freight services improvement | ? | ? | ? | ? | ? | ? | ? | ? |
| Pipeline transport of natural resources | L | L | L | H | L | L | L | L |
| Natural resource development roads | ? | ? | ? | ? | ? | ? | ? | ? |
| Port facility improvement | H | L | L | N/A | H | H | H | M |
| Access improvement to recreation areas | H | H | H | H | H | H | H | H |
| Scenic highway protection or development | H | H | H | H | H | H | H | H |
| Improvement of communication facilities | ? | ? | ? | ? | ? | ? | ? | ? |

H - High Priority, M - Medium Priority, L - Low Priority.

N/A - Not applicable.

? - Data not available at present.

The Queen Elizabeth Way, which is being upgraded, will still not have the capacity to meet future requirements, particularly with regard to summer recreation traffic which at present accounts for the majority of trips made. Consideration of an additional highway orientated towards serving recreation traffic, and the improvement of access to recreation areas in general should be given a high priority. Simultaneously, measures designed to protect the scenic nature of areas of outstanding natural beauty, along highways in particular, should be given high priority throughout the Region.

The rural roads in Norfolk and Haldimand may be expected to become inadequate in meeting future demands as the new development proceeds in Nanticoke. Highway 6 between Port Dover and Hamilton will have a heavy volume of traffic, both cars and trucks, as will Highway 3 between Fort Erie and Highway 401. Similarly, because of this development rail cargo services should be maintained and improved in Norfolk and Haldimand. The construction of a water pipeline to the Brantford area should be given a high priority.

Technology The adoption of recent technological innovations in transportation could result in intensifying the Region's problems if they are not integrated into an overall transportation plan. With proper planning, the Region's potential could be enhanced by using transportation as a vital component in the structuring of the future spatial distribution of the Region's population and activities.

The introduction of hovercraft or hydrofoil services on the Great Lakes will become increasingly feasible for the transportation of both goods and people. Hovercraft have an advantage over the hydrofoil in that they can be used over either land or water, and the winter freezing of the Great Lakes would not interfere with the provision of regular services. ~~The provision of services between Toronto and the industrial areas on Lake Erie via the Niagara Region, would greatly decrease the time-distance for the movement of persons and goods.~~ With the imminent development of the Great Lakes Megalopolis and increased interaction between its major urban nodes, considerable demand will be generated for the development of fast and regular services on the Great Lakes. Therefore, it is advisable to plan now for the advent of the hovercraft by providing land for the development of routes and terminals, and the inevitable economic activities which will require land in the immediate vicinity.

Go-train type services may become desirable to connect the major centres of urban population in the Niagara Region. Such services would increase accessibility between the centres through reducing the time-distance between them and would also reduce road congestion. Increased use of containers in the movement of goods by rail is highly probable.

Ships on the Great Lakes have become larger in order

to facilitate the handling of bulky goods, and minimize the time spent in port. The future size of ships will, to a large extent, be governed by the capacity of the canals. In relation to the Niagara Region, the Welland Canal and the St. Lawrence Seaway will be of particular significance.

Containerization, which has already become important in the movement of general cargo, will continue to increase in importance. In order to provide this faster, more convenient service to the industries in the Niagara Region, ports will need specialized handling facilities.

The most significant development in air transport in recent years has been air freight for semi-bulk goods. The new jumbo jet airport to be located in Southern Ontario will benefit the industries both in the Niagara Region and in other areas of the Province.

3. Community and Regional Environment Priorities

This goal is concerned with the development and conservation of the Niagara Region in such a way as to optimize the quality of the environment.

Problem Identification There are many serious environmental problems throughout the Region. Environmental pollution occurs in the form of water pollution (in all counties), and air

TABLE 8.3

COMMUNITY AND REGIONAL ENVIRONMENT PRIORITIES

| | | Lincoln And | | | | Niagara |
|--|------------------|----------------|--------------|------------------|----------------|---------------|
| | <u>Wentworth</u> | <u>Welland</u> | <u>Brant</u> | <u>Haldimand</u> | <u>Norfolk</u> | <u>Region</u> |
| | <u>Zone</u> | <u>Zone</u> | <u>Zone</u> | <u>Zone</u> | <u>Zone</u> | |
| <u>Needs</u> | <u>1</u> | <u>2</u> | <u>3</u> | <u>4</u> | <u>5</u> | |
| Municipal water supply | M | M | M | H | H | H |
| Municipal sewage treatment | H | H | H | H | H | H |
| Reduction of air pollution | H | H | M | H | H | H |
| Reduction of scenic pollution | H | H | L | L | L | M |
| Reduction of environmental pollution by chemicals, pest controls | H | H | H | H | H | H |
| Urban noise abatement | ? | ? | ? | ? | ? | ? |
| Protection of prime farmland from urban development | H | H | H | H | H | H |
| Preservation of prime recreation areas | H | H | H | H | H | H |
| Protection of fish and wild- life habitat | H | H | H | H | H | H |
| Reduction of erosion | L | L | H | H | H | M |
| Conservation of prime forest resources | L | L | L | M | M | L |
| Use and restoration of mineral sites | H | H | M | M | M | M |
| Retain open space between urban centres | H | H | H | H | H | H |
| Prevent urban sprawl along highways | H | H | H | H | H | H |
| Concentrate urbanization in selected centres | H | H | H | H | H | H |
| Maintain variety of different sized centres | L | L | L | H | H | M |
| Maintain quality of urban neighbourhoods | H | H | H | M | M | H |
| Prepare urban and rural land use plans | L | M | M | H | H | H |

H - High Priority, M - Medium Priority, L - Low Priority.

? - Data not available at present.

pollution (in Wentworth, Lincoln and Welland, especially at Hamilton). Erosion occurs along the Niagara Escarpment, in the Grand River Valley, along parts of Lake Erie and along a number of small streams which handle an excessive amount of sewage. Protection of fish and wildlife habitat is extremely important especially in light of the extensive water pollution in the Region.

Urban sprawl occurs along a number of urban corridors especially in Wentworth, Brant, Lincoln and Welland counties. There is also the danger of urban sprawl in Norfolk and Haldimand counties associated with future industrial development. It is essential that all parts of the Niagara Region have land use plans. It is most important that these be coordinated with the forthcoming plans being prepared by the Regional Development Branch and the Haldimand-Norfolk Study Group.

Technology Technology may contribute to the realization of these goals. The creation of more efficient air and water pollution control devices for industry, and erosion control devices seems assured. The development and installation of more efficient water purification and sewage disposal equipment will also help to solve these problems. The improvement of planning techniques and an increasing public awareness of the environmental dangers, may result in the creation and implementation of land use plans at the local level.

4. Social and Economic Welfare

This goal is directed at general improvement of the social and economic environment. The provision of opportunities and encouragement for every individual to satisfy his economic, physical and psychological needs, is as important as the maintenance of a climate in which he can develop and retain the qualities of self-sufficiency, dignity and self-respect.

Problem Identification In attempting to improve socio-economic conditions for the Niagara Region the following problems should be considered:

- a. The levels of per capita income, average income per household and average personal income in Norfolk and Haldimand counties which are below the regional average.
- b. The differences in standards of living between the more urbanized counties of the north and northeast, and the more rural counties of the southwest.
- c. The inequalities of opportunity for native Indian and unskilled immigrant groups, both of which are disadvantaged in their search for higher incomes.

TABLE 8.4

SOCIAL AND ECONOMIC WELFARE PRIORITIES

| | Lincoln | | | | Niagara Region |
|---|-------------------------------|------------------------------------|---------------------------|-------------------------------|-----------------------------|
| | Wentworth Zone <u>1</u> | And Welland Zone <u>2</u> | Brant Zone <u>3</u> | Haldimand Zone <u>4</u> | Norfolk Zone <u>5</u> |
| <u>Needs</u> | | | | | |
| Increase per cent families living above poverty level | M | M | M | H | M |
| Reduce proportion of persons requiring welfare | ? | ? | ? | ? | ? |
| Equalize opportunities for native Indians, foreign born | M | M | H | M | M |
| Reduce disparity between urban and rural income | L | L | M | H | H |
| Improve social services for low income groups | ? | ? | ? | ? | H |
| Improve social services for the aged | M | M | M | H | H |
| Improve social services for the young | L | H | M | H | M |
| Improve social services for family and marital counselling | ? | ? | ? | ? | ? |
| Improve social services for physically and mentally handicapped | ? | ? | ? | ? | M |
| Group social services in accessible centres | L | L | L | H | H |
| Improve condition of housing | H | M | M | M | H |
| Reduce overcrowding in dwellings | ? | ? | ? | ? | M |
| Reduce housing cost for low income | ? | ? | ? | ? | M |
| Increase range of housing type choices | M | M | M | H | M |

H - High Priority, M - Medium Priority, L - Low Priority.

? - Data not available at present.

- d. The inadequacy of housing facilities in many areas and the lack of choice in housing for lower income families.

Although it is not possible at present to assign priorities for all social and economic welfare priorities, it is hoped that information from both the general public and from other government departments will enable such a judgement to be made in the near future.

5. Health

This goal is concerned with the provision of physical and mental health services for the population of the Niagara Region at minimum public and private cost.

Problem Identification In the Niagara Region, health services merit general improvement as the level of these services is below that for the Province as a whole. Only in Wentworth County is the level of service above the provincial average. Hospitals, doctors and dentists are concentrated in the urban areas of the northern and northeastern parts of the Region, where the facilities are generally excellent. The more rural counties are at a great disadvantage both in terms of the time it takes to travel to the centres where professional attention is provided, and in the range and most effective use of services available.

TABLE 8.5

HEALTH PRIORITIES

| <u>Needs</u> | <u>Wentworth</u> | Lincoln And <u>Welland</u> | <u>Brant</u> | <u>Haldimand</u> | <u>Norfolk</u> | Niagara <u>Region</u> |
|--|-------------------------|----------------------------------|-------------------------|-------------------------|-------------------------|--------------------------|
| | <u>Zone</u> <u>1</u> | <u>Zone</u> <u>2</u> | <u>Zone</u> <u>3</u> | <u>Zone</u> <u>4</u> | <u>Zone</u> <u>5</u> | |
| Reduce infant mortality and other premature deaths | ? | ? | ? | ? | ? | ? |
| Reduce V.D. and other communicable diseases | ? | ? | ? | ? | ? | ? |
| Reduce the incidence of dental caries | ? | ? | ? | ? | ? | ? |
| Reduce the incidence of mental illness | ? | ? | ? | ? | ? | ? |
| Reduce the incidence of drug addiction | ? | ? | ? | ? | ? | ? |
| Improve the medical facilities available | M | M | M | H | H | H |
| Increase the number of doctors, dentists, etc. | M | M | M | H | H | H |
| Improve ambulance services | ? | ? | ? | ? | ? | ? |
| Reduce public and private medical costs | ? | ? | ? | ? | ? | ? |

H - High Priority, M - Medium Priority.

? - Data not available at present.

6. Education

This goal aims to provide opportunities and encouragement for each individual to achieve the highest intellectual, personal and social development of which he is capable. More specifically, it aims to improve the level of educational attainment, the quality of facilities and the level of adult education.

Problem Identification Survival rates of children reaching Grade 13 from Grade 9 indicate that children in the Niagara Region perform at a very similar level to children in the Province as a whole. However, intra-regional disparities exist. Haldimand and Norfolk have the lowest proportion of children remaining in school until Grade 13 and on this basis these counties should be given high priority for educational improvements. Sub-regions 1 and 2, which perform better than the regional average, are not problem areas in this respect.

A lower student-teacher ratio could improve the quality of education by permitting greater individual attention, but there are significant exceptions. For example:

"in a small school with only a few rooms....a lower student-teacher ratio may exist with one teacher teaching all courses in several grades to a few pupils and accordingly unable

TABLE 8.6

EDUCATIONAL PRIORITIES

| | | Lincoln And Welland | Brant | Haldimand | Norfolk | Niagara Region |
|---------------------------------------|------------------|---------------------------|-------------|-------------|-------------|-------------------|
| | <u>Wentworth</u> | <u>Zone</u> | <u>Zone</u> | <u>Zone</u> | <u>Zone</u> | |
| <u>Needs</u> | <u>1</u> | <u>2</u> | <u>3</u> | <u>4</u> | <u>5</u> | |
| Reduce secondary school dropouts | L | L | M | H | L | M |
| Reduce pupil/teacher ratios | M | L | M | M | L | M |
| Upgrade smaller secondary schools | ? | ? | ? | ? | ? | M |
| Increase post-secondary enrollment | ? | ? | ? | ? | ? | M |
| Increase adult education courses | L | L | L | H | H | M |

H - High Priority, M - Medium Priority, L - Low Priority.

? - Data not available at present.

to give as much individual attention as in a larger metropolitan school with higher student-teacher ratios."¹

At the regional level, the student-teacher ratio at the secondary school level compares favourably with the Province, but is somewhat higher for elementary schools. A reduction in the student-teacher ratio should be given medium priority in Wentworth, Brant and Haldimand.

Students in the southern and southwestern parts of the Niagara Region have very limited educational opportunities at the post-secondary level. It is very difficult for students to attend a university or community college while living at home because of the distance that has to be travelled.

7. Recreational and Cultural Priorities

This goal is concerned with increasing the recreational and cultural opportunities in the Niagara Region.

Problem Identification Recreational and cultural amenities are of great importance to the Niagara Region since a large part of the regional economic activity involves tourism. The

¹Economic Council of Canada, Sixth Annual Review, Perspective 1975, (Ottawa: Queen's Printer), 1969, p.133.

TABLE 8.7

RECREATION AND CULTURE

| | | Lincoln And | | | | Niagara |
|---|------------------|----------------|--------------|------------------|----------------|---------------|
| | <u>Wentworth</u> | <u>Welland</u> | <u>Brant</u> | <u>Haldimand</u> | <u>Norfolk</u> | <u>Region</u> |
| <u>Needs</u> | <u>Zone</u> | <u>Zone</u> | <u>Zone</u> | <u>Zone</u> | <u>Zone</u> | |
| | <u>1</u> | <u>2</u> | <u>3</u> | <u>4</u> | <u>5</u> | |
| Increase provincial parks | M | M | M | M | M | M |
| Increase regional and municipal parks | H | H | H | H | H | H |
| Increase public facilities for: | | | | | | |
| Campsites | H | H | H | H | H | H |
| Hiking trails | H | H | H | H | H | H |
| Picnic areas | H | H | H | H | H | H |
| Boating facilities | H | H | H | H | H | H |
| Swimming facilities | H | H | H | H | H | H |
| Snowmobile and ski trails | M | M | M | M | M | M |
| Scenic drives | H | H | H | H | H | H |
| Outdoor and indoor group sports | ? | ? | ? | ? | ? | ? |
| Increase private facilities for resorts | H | H | H | H | H | H |
| Increase private facilities for weekend and vacation cottages | H | H | L | H | H | H |
| Increase and improve libraries | ? | ? | ? | ? | ? | ? |
| Increase and improve art galleries, museums | M | M | M | H | H | H |
| Increase and improve TV and radio stations | ? | ? | ? | ? | ? | ? |
| Increase and improve weekly and daily newspapers | ? | ? | ? | ? | ? | ? |
| Preserve historic sites and buildings | M | M | M | M | M | M |

H - High Priority, M - Medium Priority, L - Low Priority.

? - Data not available at present.

population of the Region and of the areas in Ontario and North America which contribute tourists and tourist dollars is rapidly increasing. It is, therefore, important that the recreational and cultural facilities for these tourists expand at least as quickly as the demand. Also, as leisure time increases, so recreational and cultural activities will increase. The Niagara Region will be under very heavy pressure to meet these needs. Since recreation has in the past provided a very good source of regional income, its future development should be encouraged.

The most easily identifiable problems for expansion are created by soaring land acquisition costs, which make it difficult to meet the need for more regional and municipal parks, for increased private facilities for resorts and for scenic drives along the Escarpment. The quality of the facilities, however, is often more unsatisfactory than the quantity. Poor quality resulting from environmental pollution frequently impedes expansion. Consequently, swimming and boating facilities suffer from the high levels of water pollution throughout the Region.

The cultural facilities should also be expanded, for example, the Shaw Festival at Niagara-on-the-Lake. The maintenance of historic sites and buildings is particularly important and should be continued.

Technology Technological innovation in the field of environmental and pollution control will add great impetus to the development and expansion of recreational facilities.

Overall Regional Priorities Many of the problems being faced by the Region are due to the fact that the Niagara Peninsula is an old, well-established area. Many of its facilities, both public and private date back to the nineteenth and early twentieth centuries. Rapid rates of technological change are making many of these facilities obsolete.

It should also be remembered that in addition to serving its own needs the Region is and has been for the past century serving certain provincial and national needs. Its location, for example, has resulted in the Region being used as an international crossroads. Many of the problems, therefore, which are associated with both land and water transportation are of national and provincial as well as of regional origin. Its unique combination of natural resources together with its close proximity to Metro Toronto, have resulted in the Region's emergence as a provincial recreation area. Hence problems associated with recreation are of provincial as well as regional responsibility.

Its fruit-growing industry and its non-metallic mineral extraction industries are among the only such industries in the

TABLE 8.8

OVERALL REGIONAL PRIORITIES

| <u>Needs</u> | <u>Wentworth</u> | Lincoln And <u>Welland</u> | <u>Brant</u> | <u>Haldimand</u> | <u>Norfolk</u> | Niagara <u>Region</u> |
|---------------------------------------|-------------------------|----------------------------------|-------------------------|-------------------------|-------------------------|--------------------------|
| | <u>Zone</u> <u>1</u> | <u>Zone</u> <u>2</u> | <u>Zone</u> <u>3</u> | <u>Zone</u> <u>4</u> | <u>Zone</u> <u>5</u> | |
| Economic development | M | H | H | H | H | H |
| Transportation and communication | M | H | M | H | H | H |
| Community and regional environment | H | H | M | H | H | H |
| Social and economic welfare | M | M | M | M/H | M/H | M/H |
| Public safety | ? | ? | ? | ? | ? | ? |
| Health | M | M | M | H | H | M |
| Education | M | M | M | H | H | M |
| Recreation and culture | H | H | H | H | H | H |

H - High Priority, M - Medium Priority.

? - Data not available at present.

Province. Hence their continued existence should be a matter of provincial as well as regional concern.

The same is true for the general environmental problems facing the Region. They are in part at least the result of user-pressures originating outside the Region. The table of regional objectives represents a preliminary evaluation of overall regional priorities.

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